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ORIGINAL ARTICLES.

PROFESSIONAL DISCRETION. THE MEDICAL SECRET.*

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IT is hardly necessary to impress upon the physician the obligation of secrecy in relation to any information of a patient's condition confided to him in the exercise of his profession. This obligation, which was formulated in the precepts of the Hippocratic oath, has been accepted as the truest and finest expression of the physician's duty to his patients and has been approved by the wisest and best of medical men in all ages. The observance of this code of duty is the primal professional virtue; and is universally recognized as the basis of all relations between the physician and patient.

No matter what theories or dogmas have divided medical men in opinion or created separate sects or systems of practice, the medical profession, with a remarkable unanimity, has remained faithful to this code of duty. Even the least scrupulous of medical men who fail wofully in their ethical duty to their confrères recognize the binding character of this obligation to their patients. Physicians may violate every principle of right and decency toward a fellow practitioner —may disparge and belittle his reputation and injure his practice—all this may be excused or condoned on the ground of professional rivalry, but the medical secret is regarded as sacred and inviolable.

In relation to venereal diseases, from their essentially private nature and, especially, their "shameful character" in popular estimation, the obligation of secrecy takes on a more vigorous and peremptory application. They are the diseases of all others which the patient would not wish revealed, and it is evident that a knowledge of their existence would not be confided to the discretion of the physician if there was any risk of it being divulged. It is only by virtue of this tacit, though well understood contract that the confidential relations between physician and patient are established and maintained.

To the force of traditional custom the law has also added its weight of authority by making the violation of the professional secret a penal offense. But the law evidently considers the common interests of the social order superior to the interests of the individual, since it has made it obligatory upon physicians to report all cases of contagious diseases which are regarded as dangerous to the public health. This compulsory notification is justified since it is the basis of all prophylactic measures for the protection of the public against these diseases. Doubtless the intent of the notification laws is to include within their scope all diseases which are recognized as contagious and dangerous to the public health. Venereal diseases fulfil both of these conditions, but they are exempted from declaration chiefly because of their difficult and baffling character as a sanitary problem. The French law even compels the violation of the medical secret in decreeing that "the physician who knowingly leaves a nurse in ignorance of the dangers to which she exposes herself in nursing an infant suffering from congenital syphilis may be declared responsible for the prejudice caused by his reticence." It is obvious, however, that the physician cannot disclose the nature of the disease with which the child is affected without revealing the secret that one or both parents are syphilitic.

In Norway and Denmark the declaration of venereal diseases is made obligatory by the law, and while the information is kept secret by the sanitary authorities, it has proven to be one of the best measures for the prophylaxis of venereal diseases, as it has enabled the authorities to locate dangerous sources of contagion and subject them to surveillance and treatment. Doubtless it is only a question of time when the registration of venereal diseases by our Sanitary Bureaus will be generally adopted.

In the ordinary treatment of venereal diseases the physician finds it easy enough to adjust his line of conduct in strict accordance with his code of professional duty, as in such cases the individual interests of the patient alone are involved, but when a venereal patient consults a physician in regard to his marriage, the situation is changed, the interests of others may be jeopardized. His protective duty extends to the wife and future children, and through them to society at large.

It often happens that the special obligation imposed upon the physician to protect the interests of his patient is opposed to and irreconcilable with this larger social duty to preserve others from infection. There thus arise many situations in which the question of professional discretion obtrudes itself and therein the physician perceives a divided duty.

In many cases when the patient applies to the physician for advice in regard to the propriety or safety of his marriage, he does so with the honest intention of accepting and abiding by the physician's decision. The chief rôle of the physician is to explain the significance of the disease, the dangers it might entail in married life, the necessity of treatment and the period necessary to

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wait before his marriage could be sanctioned as safe. However onerous these conditions may be and however prolonged the prematrimonial probation, the patient yields a more or less ready assent.

There is another class of cases, unfortunately not rare, in which the man fully instructed as to the dangers he would carry with him into married life, will not forego a contemplated marriage despite all representations the physician may make as to the danger of infecting his wife. He will plead an engagement from which he cannot honorably retreat, arrangements completed for the marriage, pecuniary or other selfish interests that would have to be sacrificed—pretexts as numerous and varied as are the motives that influence men to matrimony. He resolutely refuses to forego the marriage. To the physician's advice to wait until he is cured when he can enter the marriage safely and honorably, he will perhaps urge that delay would mean the defeat of his matrimonial projects. The physician's appeal to his honor, the denunciation of his action as base and criminal, do not shake his determination. It is precisely in situations such as these, in dealing with this type of conscienceless criminal—for it is a moral if not a legal crime for a man to risk giving syphilis to a woman who accepts him as her husband—that the professional secret introduces a complicating element which renders the physician's line of conduct extremely difficult in view of the opposing interests involved.

On the one hand there is the duty to protect the confidence of the patient who has consulted him relying upon the traditional assurance that this confidence is sacred and inviolable; on the other an innocent woman, it may be the cherished idol of her parents, who is to be the victim of a most odious injury, the supreme insult that a virtuous woman can receive, to say nothing of the injury to her health and the destruction of her offspring.

The Hippocratic oath enjoins, "My tongue shall be silent as to the secrets which are confided to me and I will not use my profession to corrupt manners or *aid crime.*"

Here is a crime contemplated but not yet consummated, without malice, it is true, but none the less wilful, and from the basest and most sordid motives. The prospective victim is most often a pure young woman, confiding in the love and honor of the man who is about to do her this unspeakable wrong.

By the accident of his professional relation to this man the physician happens to be the only person who can prevent the consummation of this crime, as he is the only confidant. Does not his silence and inaction make of him an accomplice, a *particeps criminis?* The remorseful self-accusation of Paul was that "I was also standing by and consenting unto his death and held the raiment of them that slew him." Is not this paralleled by the attitude of the physician who stands by and guards the dissolute secret of the assassin? A single word to the family physician or natural protector of this woman would save her from this terrible fate, yet the physician is fettered hand and foot by his cast-iron code, his tongue is silenced, he cannot lift a finger or utter a word to prevent this catastrophe. His code shields the criminal more effectively than the most solemn personal pledge. The very name and nature of the disease gives an added significance to the physician's obligation not to reveal it.

If it were a taint of insanity, of cancer, of leprosy even, it might be hinted at or indirectly revealed, but syphilis never.

Another aspect of the situation may be considered which has been literally duplicated in practice. The intended victim is also a patient of the physician. He has brought her into the world, her family have been lifelong friends and patients—but this does not alter the situation. The professional code marks out and strictly limits his line of conduct. Ethically he has no more right to intervene than if she were a complete stranger. He cannot apply the knowledge of a person he has gained in his capacity as a physician to protect one who may be as dear to him as a member of his own family.

There are no circumstances in the entire range of a professional man's experience so painful as to recognize himself powerless to prevent the morally culpable union of a syphilitic man and an innocent woman. There is no situation in which the arbitrary restrictions of a code of conduct based upon professional secrecy seem so opposed to the voice of conscience and the dictates of humanity as the one under consideration. To protect the man, he feels to be odious, immoral and culpable, to protect the woman would be manly, humane and just. The inspiration of his conscience cries out against the former duty, every noble instinct of his nature would be enlisted in the latter duty.

What has been termed the "eternal problem" of the professional secret has long engaged the thoughtful attention of medical men. Like all problems connected with the prophylaxis of venereal diseases it is exceedingly complex and baffling. It may be said that no solution of these problems has ever been proposed, no plan of action for the regulation or control of these diseases has ever been formulated which does not come in conflict with individual liberty, legal rights or moral principles. There is always an irreconcilable conflict between the sanitary and other interests involved.

Now it will be admitted that it is distinctly a sanitary duty to guard against the introduction of venereal diseases in marriage, because they compromise the health of the wife, the existence of the children she might bring into the world, and through them the interests of society. But it would appear that the higher duty of the sanitarian to preserve others from infection falls below his duty as physician to protect a wretch in infecting them. Not only the interests of the many are sacrificed to the interests of the individual,

but the innocent are made to suffer in order to advantage the guilty. The law which backs up and supports the sanitarian in his efforts to control and limit the spread of contagious diseases in general here intervenes in favor of the spreader of disease. It sets its seal of silence upon the secret of the individual which cannot be broken—under penalty of the law.

It would simplify the situation if the physician could accept and act upon Dogberry's charge to the Watch in "comprehending vagrom men:"

"You are to bid the man stand in the Prince's name."

"But if he will not stand?"

"Then let him go his way and thank God that you are rid of a knave."

But does not the advice of a distinguished authority have the same exquisite Dogberrian flavor? "Tell him plainly the truth, show him that he will commit a crime in marrying, and if it is seen that he will not be convinced, dismiss him brusquely, as you would dismiss an assassin."

Practically, however, it is to this inane rôle that the physician is reduced through the alienation of his liberty of action by his professional code.

In this connection it will be interesting to compare the views of different writers upon this aspect of medical deontology.

Langlebert gives the following case: "The father of a young woman asks information relative to the health of a young man (your patient) who is engaged to his daughter. 'I wish to ask under the seal of secrecy certain details as to his malady. I beg you to say whether I can or cannot accept him as a son-in-law. I hope that you will take into consideration the embarrassment of a father placed between the desire to give his daughter the husband of her choice and the fear of the results the marriage may have if the hints that have been given me are unfortunately true.'"

"In the case given above," says Langlebert, "should the physician, entrenching himself behind the Hippocratic oath and the proscriptions of the law, guard an absolute silence, or only interrogating his conscience, should he make it the judge of the secret confided to him, to divulge it, or be silent, according to circumstances?"

Commenting upon this case, Dr. Gaide says, "If a client affected with constitutional syphilis, which resists all treatment, does not fear to solicit the hand of a pure young woman, who is the joy of her family—if the father of this young woman comes to demand of me in confidence, if he can in all security give her to this man who would soil her by his first contact and leave her as her only consolation children affected by this malady, shall we respond with a silence which may be misunderstood and thus render ourselves accomplices of a marriage the fruits of which will be so deplorable? Never would I have the courage to obey the law under such circumstances. My conscience would speak higher than it, and without hesitation I should say, 'No, do not give your daughter to this man,' and I would not add another word."

Langlebert indicates the physician's rôle as follows: "I regret that I cannot give the information you ask. The best you can do, if you intend to carry out this project of marriage, is to inform the young man of the warnings you have received or have him come with you or send me a writing by which he authorizes me without restriction to say whether he can or cannot espouse your daughter.

"The physician ought to interdict all kinds of information as to the health of a patient on the occasion of marriage, as a professional principle, an invariable rule of conduct, he should take refuge behind the proscriptions of the law.

"The alternative is cruel, it requires a certain courage in such cases for the physician to remain master of himself and faithful to his duty.

"If it be a misfortune to society it would be a much greater damage to permit the enfeeblement of the tutelary principle of the medical secret which is one of the necessities even of the social order."

Juhel Renoy maintained that it was not only lawful but even compulsory for any doctor who was a man of honor and courage to oppose and even denounce any criminal projects his patients might entertain in regard to marriage. He cites two instances in which he had undertaken the cause of young girls who were about to fall into a trap of this kind and as his patients were without conscience, and had refused to listen to the moral reason he adduced, he had declared that he did not feel bound to secrecy toward them any longer and that he would either go or send to the parents of the young women and warn them. Under this threat one of these marriages was broken off, but a more direct interference was required in the other case. He sent for the girl's father by one of his confrères and replied without hesitation to the question put to him, "No, sir; do not marry your daughter to Mr. X," with so much emphasis that the marriage was broken off.

Jullien, commenting upon his confrère's action, says: "If the result was fortunate the method employed was detestable." "It was treason, perpetrated with the 'best intentions,' but still a treason, for it is all very well to say the patients were warned but it was not until they were no longer masters of their secret, which no doubt would not have been revealed if they had known what use was going to be made of it; strict duty would have required that before receiving this confidence our confrère should have warned the parties interested that he would publish the information if he saw fit."

Jullien reports with evident approval how an old practitioner, Dr. Piogey, solved this troublesome problem.

"A young girl, whom the doctor had brought into the world, of whose family he was a personal friend, and who was beautiful and charming, was about to be married. The Doctor knew the in-

tended bridegroom. He had attended him and attends him still for a terrible, incurable, contagious hereditary disease. To a man so afflicted to marry was not only a bad action but a crime—a really moral and physical murder. The Doctor went to the young man. He showed him the infamy of his conduct. But he had to do with a "struggler for life," who replied coolly that he cared little or nothing for the girl, but she was rich and would save him from ruin, and all that he could promise was to content himself with her money only. What was to be done? The rule of the profession is strict. Even in such a case the Doctor could not break it. The scoundrel knew that and told the Doctor so. "Very good," replied the Doctor, "but since you are unwilling to leave your prey I will snatch it from you. If you do not break off this marriage to-morrow, I will strike you in the face at the Opera." The courage of an honest man overcame the coward and the marriage was broken off. While this action on the part of the Doctor was unquestionably chivalric, it is too Gallic and melodramatic to be imitated in our Western hemisphere.

Thibierge, who proves himself in his recent work (Syphilis and Medical Deontology) a stanch upholder of the absolutism of *le secret médical*, admits "that this obligation weighs heavily upon the physician who in submitting to it is placed in the impossibility of preventing syphilitic contaminations, often multiple, in not being able to prevent the syphilitic from marrying. The medical man feels the obligation to guard the secret troubling his conscience and he regards himself almost as an accomplice in an action which he justly esteems criminal, since the syphilitic will not fail to contaminate his wife; in such circumstances the law appears to him odious, and seems to have been made mainly for the purpose of protecting particular interests, and among them the least respectable of all—the general interest seems to be sacrificed. The physician, in his revolt against the law, may be tempted to yield his obligations to the cry of conscience, forgetting that in the language of a distinguished magistrate, "no one is sufficiently sure of his conscience to put it above the law." Nevertheless Thibierge contends that while the more obvious intent of the law may seem to be for the protection of the individual, yet in reality its ultimate result is in the interest of society, since the enforcement of the obligation of the medical secret constitutes the indispensable condition as well as the most efficacious means for the public prophylaxis of syphilis. He reasons as follows:

"If the medical secret ceased to be imposed and the syphilitic could not count upon the silence of the physician, he would take care not to address himself to the conscientious physician but betake himself to the charlatan, whose silence he could purchase, or, for greater security, he would treat himself or not be treated at all.

"Others, honest but timorous, having the impression that a syphilitic man can never marry—might mistake a simple venereal accident, easily cured, for syphilis, and consequently remain celibates.

"Others, again, suffering from a benign syphilis, held back by the fear of confiding their secret to a physician, would not be treated at the beginning of their disease and seeing all manifestations disappear completely, would imagine themselves cured and marry and infect their wives. Finally, old syphilitics who had had the disease many years previously, not knowing that it was safe for them to marry, would remain single.

"The disadvantages resulting from this relaxation of the medical secret would be, both for individuals and society, much more numerous and frequent and altogether quite as grave as those which it is designed to prevent."

It will be admitted that there is much truth in this line of argument. The venereal patient, and especially the syphilitic, is a timorous creature. He is keenly alert to any circumstance that might suggest a suspicion of his disease. He scents danger of exposure where none exists. He often neglects to give his name or address to the specialist he consults. He looks askance at any prescription, fearing that it may give a clue to the nature of his disease, and he will go to an out of the way pharmacy to have it filled. The slightest intimation that his secret would not be held sacred by the physician under any and all circumstances would drive him away.

Under such conditions the valuable protective service which physicians are now able to render society by enlightening venereal patients as to the dangers of their disease by persuading them from their projected marriage until time and treatment render such a step safe, would be sacrificed.

When we come down to the question of practical results, even assuming that the obligation of the medical secret were entirely abrogated, and that the sanitary duty of the physician in excluding venereal diseases from the marriage relation was as plain as that of the Health Board in excluding trachoma and other contagious diseases from the public schools, what could be accomplished?

In the first place in the larger proportion of cases venereal diseases are introduced into marriage from extraconjugal infections, contracted *post nuptias*. Here it is evident that the preventive duty of the physician could not be exercised.

In the next place in many cases the specialist consulted often knows nothing of the parties interested, neither the name or address of the intended victim, or of her natural protector or the family physician—all may live in a distant city. He could not utter a word of warning, even if such interference were justifiable.

Finally, few patients when enlightened as to the serious and dangerous consequences of a premature marriage, brazenly avow to the physician their intention of carrying out their criminal intent, despite his warnings. One "will see about putting it off," another "will consider the matter," another will remain silent, and while the physician may be morally sure that the man is secretly

but none the less resolutely determined to carry out his purpose, he cannot take any step to guard against an act on the part of the patient the intention of which may be distinctly disavowed.

After weighing all the arguments pro and con, after studying dispassionately the practical results which would follow an innovation upon the established principles which guide professional conduct in relation to the patient's confidence, we are forced to the conclusion that the solution of this problem must be found in some other way, *in any other way* than in removing the old landmarks. We may justify ourselves in ignoring particular cases in which both conscience and humanity cry out against our silence and inaction by the consideration that in taking a broader and more general view, the larger interests of society, the greatest good of the greatest number, will be best promoted by remaining faithful to the traditions of the new code. But the physician will fail in his duty if, in his endeavor to prevent the premature marriage of a venereal patient, he does not use every argument, appeal to every motive, play upon every chord of sensibility, and, if necessary, denounce the cowardice and criminality of an action which exposes the innocent to infection with all its train of physical woes.

While the obligation of the medical secret is in the general interest of the social order and should be maintained as a fixed principle of professional conduct, it may be admitted that a situation of a peculiarly aggravating character may present itself when the patient shows himself an exceptional sort of brute by the obstinacy with which he adheres to his criminal purposes after he is assured that he will almost certainly infect his wife—in such a case the physician, knowing all the circumstances and fully appreciating the tragic significance of such a step, must be guided by his own lights and conscience. If he should consider the criminal intent of this monster as entirely without the pale of professional protection and refuse to stifle his own feelings as a man of heart and conscience, who shall condemn him? Such a man is far more likely to prove loyal to the highest ideals of ethical duty in his relations with his patients in general, than the man who views these social catastrophes with a cold-blooded indifference, disclaiming all personal responsibility and considers that in guarding the dissolute secret of his patient he is doing his whole professional duty.

Various expedients have been suggested which would permit the exercise of the physician's protective duty, while the time-honored principles of professional conduct are still preserved intact.

M. Brouardel, whose work (Le Secret Médical) embodies the most elevated conception of the rôle of the physician in relation to professional confidence, thinks that in cases of this character a subterfuge is legitimate. Thus, "interrogated upon the health of one of his patients whom he knew to be syphilitic, he advised the father of the young woman whom he had asked in marriage to exact that his future son-in-law should take out a policy of insurance upon his life, the syphilis revealing itself by accidents so apparent, that the young man in question would not dare undergo the medical examination preliminary to the granting of the policy."

While the acceptance of a risk by a life insurance company may be regarded in some respects as a certificate of present good health, yet it would prove delusive as a guarantee against syphilis. In cases where the disease is recent or revealed by manifestations actually present at the time of examination, it might be detected, but in an interval between the outbreaks the patient even in the first year of his disease may present no incriminating evidence. In this country at least there is no uniformity in the principle adopted by life insurance companies in taking these risks. Some depend upon the results of the medical examination made at the time of the application, and others upon the truthfulness of the answers made by the applicant. The records of life insurance companies would be very misleading as a basis for estimating the prevalence of venereal disease in any country. As one examiner states, "This company apparently has a very virtuous set of members who have been remarkably free from venereal lesions."

The fathers of young women are censured for being largely responsible for the evils under consideration. It is claimed that it is a father's duty to satisfy himself of the health as well as the social and pecuniary condition of his future son-in-law. He may, indeed, contrary to established usage, interrogate the young man as to his freedom from venereal disease, but the latter would be hardly frank enough to reveal the existence of such a disease if he had it. To meet this difficulty it has been proposed that the candidate for marriage should be provided with a certificate from a physician which should be equivalent to a medical sanction or prohibition of his marriage. Many French authorities speak highly of this solution of the problem.

Jullien is quite enthusiastic over such a procedure, "as the father of a family would find himself relieved from any painful uncertainty if at the beginning of an engagement he received a paper couched in terms like this:

"'I declare Mr. X. to be free from all morbid conditions of the genital organs. After a careful local examination I have not discovered any trace of disease or contagious or transmissible malady.
(Signed) FRASCATOR.'"

"In the event of the patient being ill or still uncured of his disease, the terms might be so expressed as to make it equivalent to a certificate of disease, in which case the interested party would not likely use it."

Without reference to the hostility of public sentiment in this country against the adoption of such a restrictive measure there are certain objections of a practical nature which suggest themselves.

While it may be possible to determine the fitness of a gonorrheic for marriage by a bacteriological examination of the urethral secretions, it is not

always possible to come to an equally definite conclusion as to the aptitude of a syphilitic to transmit his malady. In many cases it is not possible to determine whether a man is syphilitic or not in the absence of existing accidents and the history of antecedent symptoms, all information relating to which the patient would doubtless withhold. Among other abuses, offices would be opened for the sale of certificates destined only to dupe those they are ostensibly designed to protect.

Another phase of quarantine protection suggested is the requirement by the State, as a preliminary condition to the issuing of a marriage license, of a certificate from an official board of examiners showing that the contracting parties are free from contagious or transmissible venereal disorder. Some of our western sociologists with a fatalistic belief in the efficacy of legislative enactments to correct social evils have sought to place such laws upon the statute books of Michigan and a number of other States. The remedy would be vain and futile of the anticipated results, its thorough enforcement would be impossible, its obvious effect would be to promote celibacy, as many self-respecting persons would rather forego marriage than be subjected to what they would regard as a humiliating condition, while others would evade the law by simply crossing the borders of another State where such a law was not in force.

(To be Continued.)

A REPORT UPON THE PHYSICS AND THERAPEUTIC VALUE OF CATHODE AND ULTRA-VIOLET RAYS; WITH REFERENCES TO THE ELECTROMAGNETIC THEORY OF LIGHT. AN ATTEMPT TO MORE CLEARLY DEFINE THE GENERAL CHARACTER OF THESE RECENTLY INTRODUCED AGENTS IN THE TREATMENT OF CANCER.

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WITHIN the past eighteen months there has been such general interest aroused in the treatment of certain cancerous and other infectious diseases by cathode and ultra-violet rays, and so many have been induced to experiment therewith, that it has seemed to me wise to study more carefully the nature of these agents in order that we may more fully comprehend their physical characteristics before employing them too indiscriminately.

It is very certain that but a small proportion of the physicians who are purchasing more or less expensive appliances, to whose uncertain effects they are subjecting their patients empirically and often rashly, have an adequate comprehension of what they are doing or how doing it. This report is a brief epitome, then, of recent researches into the physics of certain widespread or universal phenomena, with which, it seems to the writer, all should be acquainted who purpose taking up and practising the so-called X-ray or Finsen light treatment of cancer. It is not intended to present here directions for their use, nor to report cases, though to give it a certain "practical" character a few conclusions are appended. *It is too early yet to report cases.* Considerable time must yet elapse before we can speak with certainty as to the actual value of these new methods. Meantime, while waiting for these results, we can accumulate experience, and we can broaden our acquaintance with the agents to which we are resorting. It is hoped that this report will be of assistance in this direction. The subject is approached, as will be seen, with this effort distinctly in view.

Periodically in the history of events and in the advance which science is constantly making, it has become necessary to not only stop, and as it were, take account of stock, but to entirely revise present notions; sometimes in accord with entirely newly discovered facts, at other times in accord with older, and perhaps abandoned, views. This is true at the present time with regard to the most elementary notions concerning the physical character of light and electricity.

The primary concepts of science have included the existence of matter in an incomprehensibly minute division, each tiny particle being spoken of as an atom. Some such concept was absolutely necessary for purpose of measurement and calculation, and as a basis upon which to build a superstructure. While no one ever has seen, and probably no one ever will see, an atom, nevertheless the existence of atoms has been universally conceded by all scientists as a necessary postulate of thought and computation. Scientists have even gone so far as to calculate the size of the atoms, and Lord Kelvin figures the average atom as one twenty-five millionth of an inch in diameter. This is not merely the scientific use of the imagination, as Tyndall used to say, but is based upon calculations which have very much to support them, and practically nothing to weaken them, save the lack of power of our finite minds to comprehend the infinitely small. But the existence of atoms of this size, as a postulate of physical science, does not supply the demands now made upon it, and of late men have been seeking a demonstration of the existence of particles still smaller, by whose activity and ceaseless energy certain natural phenomena may be explained. Both the size and the activity of these ultimate particles transcends the limit of our imagination, yet they are necessary adjuncts to such conceptions of them as we can form. The ordinary conception of an atom has been that in one c.c. of gas there are twenty million, million, million (2^{10x10}) molecules. This was Loschmidt's estimate and it has been confirmed independently in several ways, among others by the electrolytic method and by Lord Rayleigh's calculations concerning the opacity of the air.

The researches of Prof. J. J. Thompson, assisted by those of Sir George Stokes and Prof. Townsend, have now apparently established the

existence of particles not larger than one-thousandth of the diameter of the atom whose size has just been stated, each of which is capable of carrying a tiny charge of negative or positive electricity, those carrying negative charges being those which most interest us here. It is a stream of these proceeding from the cathode which causes the Roentgen ray, instead of light rays vibrating in a lateral instead of a longitudinal direction, as was at first held. It will be seen that this is not far from accepting Crookes' fourth or radiant state of matter. The greenish phosphorescence of a Crookes' tube is due to the bombardment of the attenuated gas which it still contains by this stream of particles, which are now usually spoken of as *corpuscles*. Although it was at first held that this stream could not be deflected nor reflected, it is nevertheless true that it may be, at least in part, deflected by an electrostatic or magnetic field, if only the vacuum be high enough.

These corpuscles are also given off by incandescent metal, by cold metal when illuminated by the ultra-violet ray, and by radium. Everywhere when pressure of gas is relatively low, *i.e.*, when there is a vacuum, and when the corpuscles find few atoms to which to adhere and give up their electric charges, it is found that they are the carriers of negative electricity.

Thompson has recently shown (*Popular Science Monthly*, Aug. 19, 1901) that there is a remarkable difference between negative and positive electricity, for the latter instead of being associated with a constant mass (*i.e.*, corpuscles) one-thousandth the size of a hydrogen atom, is connected with a mass of the same order as an ordinary molecule, varying of course with the gas in which electrification takes place. That is, the carriers of negative electricity are infinitesimally minute and invariable, while all the positive masses are larger and quite variable. This naturally suggests a view that these corpuscles themselves, or ions, constitute negative electricity and that positive electricity simply implies their abscence from ordinary atoms. This takes us back to the old Franklinic view, that electricity comprised a fluid, and makes us think that in using the term electric fluid they were wiser than they knew, and that changes in the state of electrification are due to transportation from one place to another. It seems to be established that a body negatively electrified has its volume augmented, while positive electrification involving absence of corpuscles is accompanied by diminution of volume. Thus a charged body, by virtue of its charge, possesses proper mass apart from the ordinary matter composing it. All of which Thompson showed twenty years ago.

These corpuscles are not the atoms of a metal, but infinitely smaller bodies, which are the same for all substances. Their failure to escape from a metal, or from the surrounding air or medium, is due to the fact that negative corpuscles are attracted by positive atoms, even by neutral, hence the fact that metals, especially some of them, are such great conductors. Under the influence of great heat or of the ultra-violet rays, the corpuscles seem to acquire enough energy to escape. Radium constitutes an exception to this statement since emanation or escape from it takes place as rapidly as 2^{10} times per second, or two-thirds as rapidly as light moves, while they have a very much more penetrating power. Since gas becomes a conductor when the corpuscles pass through it, but not when its pressure is reduced, we have an explanation of electrical phenomena occurring in our upper atmosphere, especially when its density and movements are controlled by such currents as are known to occur. Variations in the earth's magnetic field, and consequently in the compass, may thus be explained. The conception and acceptance of those views about corpuscles, which I have just summarized, have necessitated a complete revision of previous views. These corpuscles, considered to be not larger than one-thousandth of the size of hydrogen atoms, each bearing its charge of negative electricity, are known to be discharged with tremendous velocity: (1) From the negative electrode in a Crookes' tube: cathode rays; (2) from objects impinged upon by these cathode rays (X-rays); (3) from exceedingly hot bodies, such as incandescent metals; (4) from cold metals under the influence of the ultra-violet rays; (5) from the radio-active substance or element radium.

These corpuscles, or ions, passing through a gas produce other ions by collision with its molecules. These ions also with their peculiar electric properties serve as nuclei for the condensation of ordinary matter. It has been the particular service which the great Swedish physicist Arrhenius has rendered, that he has introduced this conception of the electromagnetic properties of these ions into the theory of light, and has shown that while the ordinary properties of light may be considered as still amenable to the so-called laws under which they have so long been studied and classified, there still needs to be introduced into the subject this entirely new feature by which along with the wave motion to which we have been so long accustomed certain other physical features must be added.

Kepler and Newton, who regarded light as a corpuscular emanation, would perhaps appear to have considered it more wisely than they then realized. The hypothesis which they built up was superseded by the wave theory of Huygen's, upon which until very recently all optical calculations were made. It does not disturb the practical value of these calculations if we assume that there is actual projection of matter in the direction of the light waves; matter, probably of this corpuscular and elementary character, which has the power of permeating space, and all other material out of which the elements are probably built up, and which travels with simply inconceivable rapidity.

Let us now step aside, for a moment, from the consideration of therapeutics to see how well these views of Arrhenius fit the various facts regarding the nature of certain universal phe-

nomena, since if our primary concepts can be shown to be comprehensive and correct, it helps very much in limiting the field of inquiry to so relatively small a proposition as that of the therapeutic value of certain light rays. It is known that the surface of the sun evinces a wonderful repulsive force which, at least until now, could never be satisfactorily accounted for. Aside from its heat-giving power, it is our principal source of emission of light. Until recently it had not been generally suspected that a ray of light could exert the faintest pressure, although Maxwell calculated, in 1873, that sunlight at the earth's surface should exert a pressure of .6x10 to the minus tenth power in grams on every square centimeter (592^{x10}) Arrhenius, practically accepting this calculation, has shown that on the sun's surface this pressure amounts to 2.75 mg. for every square centimeter. If now one gram of water (*i.e.*, c.c.), weighing this amount at the earth's surface, could be carried to the sun's surface and weighed there it would be found to weigh 27.5 grams, that is, the attraction of the sun would draw it in with 10,000 times the force with which the sun's light would tend to repulse it. But now, if instead of a cubic centimeter, we consider a much smaller cube, the pressure on its base would diminish as the square of its edge, but its weight would diminish as its cube or volume. Consequently, there must come a point when the pressure of light would balance the weight of an exceedingly small particle and finally exceed it. That is, as Cox has described it, these particles would behave as if gravity had become negative or reversed. This limit in minute size is approximately reached with a cube whose edge is one micron in length, that is, one-thousandth of one millimeter.

Here we face this apparent paradox that, providing particles are small enough, the pressure of light may be a much more active factor in their activities than their weight. This will explain, for instance, the long time required for the settling of very small particles in the air, and thus we may account for the red sunsets which were noted for so many months following the eruption of Krakatoa.

But nothing will so illustrate the terrific pressure and repulsive force to which these particles may be subjected as the motions, and especially the curvatures of comets' tails, where the repellant force equals or far exceeds the gravitational or attractional force of the sun. Arrhenius and Bredichin have gone even so far as to calculate the size of the particles in the tails of certain comets, basing their calculations on the hypothesis that as comets approach the sun its intense heat provokes a violent eruption of hydro-carbon vapors, especially on the exposed side, that as the hydrogen boils off the vapors condense into minute drops or particles, of which the larger may drop back while the smaller are driven off from the sun, forming the comets' tails which have been so often seen pointing away from it. They calculate also that particles thus driven may traverse a space equal to the sun's diameter (850,000 miles) in a few minutes. If this be true the formation of tails 120,000,000 million miles long within two days, as has been actually seen, is shown to be theoretically possible.*

Equally well are the phenomena of the corona and smaller prominences accounted for. The sun must project enormous quantities of vapor into space. If this vapor condenses into particles larger than the critical size above referred to (*i.e.*, so that their weight prevents their projection by light) then they fall back toward the sun, giving rise to the prominences seen during total eclipses; if smaller they are driven into space to enormous distances, and appear as the streamers of the corona. Particles of just the critical size may float in clouds such as are also observed.

The zodiacal light may also be explained by the streams of electrically charged corpuscles which the sun emits, which by the time they reach the higher and rarefied regions of his own atmosphere are practically Roentgen or cathode rays. If very hot metal emits these rays, as we know it does, there is every reason to think that the superheated sun's surface does the same. Those rays which are visible to us lie mostly in the plane of the ecliptic, and give rise to the peculiar evening glow in the West which we speak of as the zodiacal light. This will also explain that similar but very faint appearance sometimes seen before the eastern sunrise, which the Germans have significantly termed the "Gegenschein."

No one can have watched the aurora without being struck by the similarity of its manifestations to those of the cathode rays in a Crookes' tube, especially when these latter are subjected to a magnetic field, when they describe helices about the lines of force. The negative particles coming from the sun are scattered most thickly on the equatorial regions of the earth which are most exposed, but before they reach a level in our atmosphere dense enough to excite luminescence they are caught in the lines of force of the earth's great magnetic field and follow them. As these lines dip outward from the equatorial heights toward the surface at our magnetic poles, they finally reach an elevation where the rarefaction is comparable with the vacuum of a Crookes' tube, and here they begin to give out the shifting, darting lines of enormous cathode rays. When they reach the denser layers of the air their energy is exhausted, hence the dark circles around the magnetic poles from which they seem to dart. The Swedish North Pole expedi-

*At the recent meeting of the American Physical Society in Washington (Dec., 1902), Nichols and Hull described an experiment by which something greatly resembling a comet's tail was obtained under conditions approximating those of nature. A powder consisting of a mixture of emery and puff-ball spores was placed in a vacuum tube constructed somewhat like an hour-glass. The vacuum was made as perfect as could be obtained, precautions being also used to get rid of mercury vapor. Upon pouring the powder from one part of the tube to the other, and at the same time concentrating upon it the rays from an arc, the lighter portions of the powder were seen to be blown out as though repelled by the light, and presented an appearance quite similar to that of a comet's tail. The effect was of the same order of magnitude as would be expected from the authors' values for light pressure.—*Science*, Jan. 30, 1903, p. 181.

tion by a large number of trigonometrical observations established that the average distance above the ground of the base of the aurora is at Spitzbergen, about 34 miles, at which height the pressure of the atmospheric nitrogen is about one-tenth of one millimeter. It has been also shown that at such pressures the rays of nitrogen and oxygen fade, while those of argon and the other light elements, helium, neon, krypton, and xenon, take their place. Furthermore that electrical discharges traverse six or eight times as much space in helium and neon as in hydrogen or argon. This will also explain why the spectra of argon and neon are seen in the aurora much oftener than those of helium, krypton and xenon.*

Additional plausibility is given to this explanation by the relation now universally accepted between sun spots, auroræ and magnetic storms, which have a common variability.

If cathode rays really occur in this way, and to this magnificent extent, our aurora being occasionally visible evidence thereof, then the negative ions formed by ionization of the air will form centers for condensation, and falling to the earth will charge it negatively, leaving the air at moderate heights charged positively. If this be true then clouds should be more common in years when the aurora is more frequent, which is actually the case, since condensation will depend upon the number of ions available for nuclei. The ordinary phenomena of lightning are then to be interpreted as immense sparks taking place across this spark gap.

This theory is capable of further extension to cover the formation of meteorites and nebulæ. By the aggregation of those particles which miss the earth and the planets larger masses are formed, or by the union, perhaps, of these with similar streams proceeding from other suns. Thus are constructed masses of various sizes which obey gravitational impulses, or the attraction of other masses, and move in space in accordance with these governing impulses. Yet other particles escape the other suns and stars and help to form the gaseous nebulæ, for it is well known that there are certain nebulæ which are not resolved by any telescope and whose constituents are shown by the spectroscope to be gaseous. These exist in interstellar space, at the temperature of absolute zero, at which molecular activity is almost or quite stilled, and are not capable of shining by any property of their own. Only their outer borders shine because of their bombardment by these particles which give up their electric charges, and cause the gases of the nebulæ to shine like those of a vacuum tube.

Such is a very brief résumé of the electromagnetic theory of light as comprised in the fascinating and ingenious speculation of Arrhenius, as popularly set forth by Cox (*Popular Science Monthly*, Jan. 19, 1902, p. 265), and may, perhaps, serve to give a little clearer notion as to the so-called corpuscular nature of both electricity and light.

We are now so accustomed to availing ourselves of that most interesting fact discovered by Roentgen only seven years ago that the cathode rays of a Crookes' tube not only produce fluorescence of certain salts, but permeate many apparently solid objects, while causing others to cast shadows, that we are inclined to forget how recent is this discovery, and how much it has meant to us. We are also likely to forget that Roentgen was but the last one of a group of men who had been studying the phenomena of electrical discharges in vacua. Crookes succeeded in producing higher vacua in sealed tubes than any of his predecessors, and he had reduced the pressure of the residual air in these tubes to about one ten-millionth of an atmosphere. He had shown also that at a certain stage of this exhaustion electric discharges from the cathode became visible, and had assumed that this was a projection of active matter shot off from the negative pole with a velocity which he figured at about 250,000 yards a second. Lenard in 1894 found that these rays traveled better in a vacuum than in air, that they would pass through substances opaque to ordinary light and affect a photographic plate. It was Roentgen's service to show that when the degree of vacuum was increased a variety of rays were given off which were more powerful than the Lenard rays, which seemed to be unaffected by the magnetic field, and particularly that those salts which are now used in the fluoroscope glowed under their influence.

The nature of the cathode rays is not now quite as mysterious as it was when they were first discovered. To more completely understand them we should refer to the ordinary spectrum thrown upon a screen when light passes through a prism. The more we extend our knowledge of this spectrum the better we appreciate that beyond the red end may be felt the heat waves, which are of longer wave length and which do not pass so easily through glass as does red light, thereby affording the reason for the use of a glass fire screen. Beyond these rays are others of still longer wave length which were carefully studied by Hertz, and are often known as the Hertzian rays, which have the peculiar property of converting poor electrical contacts into good ones when they fall upon them. A demonstration of such effect may be made with powdered aluminum, which ordinarily is a poor conductor, but which under the influence of Hertzian rays becomes a good one. These rays are supposed to have wave lengths even several miles in length, and they are the longest in this respect of any that have yet been discovered in the spectrum. Proceeding from this ultra red end toward the other end of the spectrum we find that wave lengths rapidly diminish and when we come to those known as the ultra-violet they are estimated as only one sixty-thousandth of an inch in length. These ultra-violet rays are also ordinarily invisible, but can be demonstrated by their property

*Air contains, by volume, one per cent. argon; one or two parts neon per 100,000; one or two parts helium per 1,000,000; one or two parts krypton per 1,000,000; one or two parts xenon per 20,000,000.

of producing fluorescence in certain substances, for instance uranium glass, which under their influence shines with a greenish-yellow light. They also affect the silver salts more speedily than do the visible rays of the spectrum.

Beyond the region of these actinic rays are others, called after Niewenglowski and Becquerel, who discovered them.

The phenomenon of phosphorescence is as yet one of nature's mysteries. It has long been known that calcium sulphide, which is the basis of luminous paint, shines in the dark, but only after it has been exposed to sunlight; by such exposure it acquires a property which it loses after a time.

Niewenglowski was probably the first to establish the fact that certain luminous rays are emitted from phosphorescent substances which may pass through opaque screens and affect sensitive plates. He proved this with calcium sulphide, which had been thus exposed to sunlight. It emitted rays which passed through an aluminum plate. But Niewenglowski's rays are due to the action of sunlight upon the material which he used, and which later emits them.

Without preceding sunlight there would be no rays of this character. But these rays are refracted by glass like ordinarv light rays, this apparently showing that they are not made up of a stream of corpuscles as are the cathode rays. These rays were first studied by Becquerel and may be spoken of as Becquerel's rays, *i.e.*, light rays of ordinary wave motion capable of penetrating certain opaque objects.

Becquerel very early conceived the idea of studying whether the property of emitting powerfully penetrating rays was not intimately bound up with phosphorescence. He proceeded empirically by placing various phosphorescent substances, enveloped in opaque wrappings, upon sensitive plates. In this way he discovered that a mineral containing the metal uranium left its marks upon the plate, and that it was not necessary that this material should be previously exposed to sunlight. By further ingenious experiments it was shown that uranium in metallic form prepared in the electric furnace gave out greater abundance of rays than did any of its compounds, and that this emission of rays was continuous and direct, even, so far as could be seen, never ceasing. The next step was to ascertain whether this property was due to uranium itself or to some other substance contained within it. A further study showed that the metal contained certain impurities, and further still that these impurities were composed of at least three distinct elements: radium, actinium and polonium. Uranium is prepared from pitch-blende. From this mineral Prof. Curie and his wife isolated a very small quantity of radium, which they finally got in the pure form of radium chloride, which has been shown to have a ray emitting power one hundred thousand times greater than uranium. If radium could be secured in pure form it would have a value of nearly $1,000 a grain. To-day in all the world there is only a fraction of a gram of pure radium chloride, and the other elements mentioned are mainly known by their spectra.

Becquerel rays then are those emitted by radium in some of its forms. Radium stands alone, so far as is at present known, in its powers in this direction. If a tube of its chloride be held to the forehead in the dark, with closed eyes, the experimenter will still see light, since the retina itself becomes phosphorescent. It shines quite vividly by its own light. When applied in sealed tubes to the outside of the body it produces intense dermatitis, or even sloughing of the skin. It imparts its radio-activity to any substance placed in its neighborhood. Not only metal objects but the clothing, and even the bodies of exposed experimenters, give out rays capable of affecting photographic plates and discharging electroscopes.

It has been lately proposed to employ radium locally over superficial cancers, and to thus take advantage of its wonderful properties in influencing the disease process. But until it can be procured in some reliable or semi-reliable form this will be impossible. A gram, if it could be procured, would be worth at least $10,000 to-day, and there does not exist, at present, in all the laboratories of the world even one gram of this precious substance.

Becquerel further experimented as to the effect of a magnet upon these rays. He has shown that some of them at least are deviable, while others are not; that is, they really consist of two distinct kinds of radiation, one influenced, the other uninfluenced by the magnet. The former seem to be identical with the cathode rays of a Crookes' tube, while the latter are identical especially with those particularly described by Roentgen.

Perhaps the greatest mystery of all is the source of the ceaseless energy which radium emits. The answer will probably be found in those vibrations of ultimate matter which are transmitted throughout space, which, as Duncan has said, is all "aquiver with the waves of radiant energy" ranging from the infinitely short to the incomprehensibly long; the rays which most interest us being the exceedingly short, while the waves of great length corresponding to the sound waves of the organ diapason are the waves of Hertz and Marconi, equally mysterious, but concerning us less at this time and place.

It is known that certain insects and small animals give off a peculiar radiation which much resembles the Niewenglowski rays, which will pass through aluminum and affect sensitive plates. Finally, still further along in the scale we come to the cathode rays, for which our only source at present seems to be electrical discharges in high vacua. These rays have a wave length and a velocity which can scarcely be measured. I will not attempt here to state the figures. They are doubtless of the same general character as those manifestations seen high in our atmosphere, which occur at any or all times, but which are more visible at night, to which we give

the name of the Aurora. There is every reason to think that both are produced alike by a stream of the corpuscles of which I spoke in the early part of this paper, or of that incomprehensibly attenuated matter to which in time past we have vaguely given the name ether, and to which Crookes referred in his description of the fourth or radiant state of matter.

When these discharges occur under our control and production it may be noted that the cathode rays will not only cause fluorescence and affect sensitized plates, but that they also will discharge bodies charged with electricity, their powers in this direction being more conspicuous than those of the ultra-violet rays. The reason for this last fact is that the cathode rays destroy for the moment the insulating properties of the air, and that the electricity consequently leaks away from the charged body. Apparently they do not show this effect through solid insulating material, nor even through the skin.

So-far as the action of the X-rays upon micro-organisms is concerned numerous experimenters have reported various results, some of which are quite contradictory. Experiments have been made in various ways with bouillon and plate cultures manipulated in various ways, and the organisms experimented with have been of all degrees of virulence. Perhaps the most instructive of these were made by Reeder, who exposed culture plates beneath sheets of lead with openings made in them, so arranged that the rays would fall upon distinct portions of the culture; further on even excluding ordinary light by black paper. He found that the various organisms flourished in those parts where they were sheltered from the X-rays by the relatively opaque lead screen, whereas on the exposed areas they were either absent or feebly developed. That the chemical nature of the medium was not altered was shown by the fact that cultures subsequently grew upon these areas. These experiments are certainly suggestive and indicate the probability of inhibition of bacterial growth by X-rays or else by electrical influences in connection with them to which influences would alike be exposed those parts of the body which are subjected to the X-ray treatment of to-day.

The general conclusion which Reeder reached is that bacteria outside of the body in suitable media can be deprived in this way of capacity for further development.

A number of experimenters have carried these investigations further and after inoculating animals with various bacteria have exposed them to the X-rays. These results have been practically negative. Passing now from electricity to light we must study it first by some of its effects.

Our knowledge concerning the action of light upon living organisms, animal or vegetable, is very inexact. It is known that the rays of the darker end of the spectrum, namely, the most refracted, are those possessing the greatest degree of chemical and the least degree of heat activity. The reason for this is absolutely unknown. Studies on the effect of monochromatic light would seem to indicate that upon animal organisms the chemical rays seem to exercise something of a distinct influence. This has not yet been demonstrated for plants.

That plants are very easily influenced by light has been firmly impressed upon my mind ever since I saw the late George Romanes demonstrate before the British Physiological Society, in 1890, experiments which he had made with fresh and tender young mustard plants. He sowed the seed in suitable small receptacles and when it began to sprout placed them in a dark chamber. In this chamber electric sparks were produced by an induction coil at varying rates. Invariably the plants turned their tops in the direction of the sparks, even when these were produced so slowly as once a minute. It was as though every tiny plant were looking toward the source of the light. I have never seen these experiments of Romanes referred to, but it seems to me that they have an importance of their own.

This appears corroborated by this fact: the ultra-violet rays have the property of discharging a negatively electrified body. When such a body is provided with a zinc surface it has been shown that while the rays produced by an arc light required twelve seconds to discharge an electroscope the condenser spark would do the same thing in five seconds. Evidently then condenser sparks are very rich in ultra-violet rays (Turner, *Medical Electricity*, p. 365).

The effect of ordinary light upon bacteria has been studied by many observers, who generally agree upon the conclusion that light is, of itself, the best, cheapest and most generally available of bactericidal agents. Experiments with monochromatic light have shown individual differences and it would appear that the heat rays are much less effective than the chemical rays. Gruber has shown that the violet rays have a much more pronounced effect upon ordinary earthworms than do the red rays, and that this effect is perceptible even upon decapitated worms. Dubois has made similar experiments with proteus, which is the most active in the darkness of the red rays and least so under the influence of the chemical. Fifty yars ago the Vienna physiologist, Brücke, demonstrated the color scale through which the chameleon would pass on changing from darkness to light, which changes are due to the pigment cells in the skin, and which he showed to be thus capable of migrating from the depths to the surface and vice versa. Paul Bert carried the experiment further and exposed one-half of the chameleon's body to red light and the other part to blue; under the former the skin remained light, under the latter it changed to dark. Numerous other experiments made upon animals would indicate the role played by light in their pigmentation.

So far as the human skin is concerned it is of course possible to very seriously affect it by heat rays, but it would appear that under ordinary circumstances it is the ultra-violet or chemical rays

which produce both pigmentation and erythema, the latter often extending into a dermatitis.

The same effects are produced by sunlight in the polar region, as in the tropics. It was Charcot who, in 1859, first stated that the chemical and not the heat rays of electric lights produced skin affections identical with those produced by sunlight.

It would appear, furthermore, that the pigment in the skin serves as a protection against the chemical rays, which fact was perhaps first stated by Unna in 1885. In general we know that as we approach the equator we find mankind darker in color and that the most gorgeous plumages are found in tropical regions. Moreover the most exposed parts of the body seem to be thus most protected by pigment. The back is usually darker than the belly, and this is conspicuously so in the case of creeping animals and flat fish. Sunlight seems to have the same effect also upon vegetation, the degree of coloration depending not upon the intensity of the light but upon the number of chemical rays.

The irritative action of the actinic rays upon the skin may produce all sorts of lesions from the mildest hue to a gangrenous destruction, depending not alone on the intensity of the light but the proportion of its chemical rays. These lesions are naturally more pronounced upon persons of light complexion, or blondes, while albinos suffer most. Observers have studied the effect of electric light upon the skin and eyes. Maklakow in order to protect others studied the effect upon himself and suffered severely both in his eyes and upon the skin of the face, the pain and edema of the face and conjunctiva being almost unendurable. Widmark, examining the subject for himself, found that when the ultra-violet rays were excluded the skin was uninjured; when the heat rays were excluded there was no particular effect.

In this connection there enters another factor, apparently unappreciated until Finsen and his pupils took it up. It relates in fact to this, that only such amount of light as is actually absorbed by the tissues is of injury to them. In other words, the actinic effect of light is directly proportionate to the degree of its absorption. When now we test tissues to see which has the greatest capacity of absorption we find that in reality the blood excels in this respect. This is a matter to be again alluded to, but it affords the explanation for the practical demonstration of the fact that the parts to be exposed to the Finsen light are to be made as bloodless as possible. Exposure to light is again the explanation for not a few of the pigmentary and other lesions of the skin such *e.g.*, pellagra and xeroderma pigmentosum or melanosis lenticularis. The first appearances are met with upon those parts most exposed to light.

Again the influence of light upon the course of variola seems to have been recognized for a good many years. It was first mentioned in 1832 by Picton and in 1867 and later by Black, Barlow and Waters. You will readily recall that the deepest and most numerous scars occur upon the face and hands. Finsen and numerous other observers have noticed that by keeping smallpox patients in rooms with red glass windows, similar to the dark rooms of the photographer, *i.e.*, that by thus filtering out the ultra-violet rays, there was very much less tendency to markings on the skin. Finsen also calls attention to the fact that it is possible to more or less protect the skin from the infection of the chemical rays by painting it with tincture of iodine, or with solution of copper sulphate, or with some ointment. The iodine colors the skin yellow, the copper solution absorbs the actinic rays and tends to color the skin black, whereby all rays are kept out.

In this connection it is worth while to remember the fact alluded to by Petersen, that in the middle ages it was customary to treat smallpox with a red colored environment, since red bedding was used, red balls were placed inside the bed, etc. Exactly what the results were we do not know. In Rumania there used to be an ancient custom to cover the face and hands of smallpox patients with red cloth, and a French naval surgeon wrote, some time ago, that he had often seen in Tonkin these patients shut up in alcoves which were completely closed with red hangings.

At all events it would appear that the exclusion of chemical rays should be absolute, that it should be continuous until the vesicles are completely dried up, that even a short exposure to light materially damages the result, that the treatment should be begun very early, that it in nowise interferes with any other treatment, and that by resorting to it suppuration and disfiguration can be remarkably diminished in degree and extent, if not absolutely prevented.

Finsen has also carried out a number of interesting observations upon the irritating properties of chemical rays. For instance, very young salamanders lying at the bottom of a dish of water are not disturbed by red or yellow light, but by blue they were promptly excited to movement; so it was, too, as before remarked, with the ordinary earth worms, which would collect beneath the red and avoid the blue glass. Gruber had also the same results, from which it would appear that various animals can distinguish by their integuments between red and blue; while they seem to enjoy the former, they avoid the latter tint. He found this true to such an extent that he described a specific photodermatic sense. The same thing may be seen even with common house flies. Indeed, the effect may be so pronounced as in certain cases to produce reflex motions in embryos and lively reaction in various smaller animals. It thus would appear that light is awakening in more than one sense.

Nearly all investigators having agreed that light is a powerful bactericidal agent, it is not strange that certain infectious diseases of the surface of the body, when exposed to it, have been found to yield to the treatment. In fact, at present it seems to be a question merely of the depth to

which its effects may be made to be felt. There is no better illustration of a lesion of this kind than ordinary lupus. There is no question but what sunlight would be always the most serviceable for this or similar purposes were it always available. When it can be used a very simple chambered plano-convex lens, several inches in diameter, can be used for the purpose. It should be several inches in diameter, with chamber open at the top in order to permit it to be filled with a methyl blue or blue vitriol solution, by which the heat rays are filtered out. This only needs to be mounted as is a compass in order to permit of its use whenever the sun is shining brightly.

I have already remarked upon the light absorbing powers of the blood. A very simple experiment may be tried at any time which will show the necessity for rendering the parts exposed to phototherapy as bloodless as possible. A piece of sensitive albumin film may be placed behind the ear in contact with the cartilage. If now the ear be exposed to ultra-violet rays even for several minutes, without compression, the effect upon the film is relatively small, but if the cartilage and the paper be pressed together between glass plates, so that the blood is expelled from the living tissue, the paper will be promptly blackened in less than 20 seconds exposure. This is an experiment so convincing that it justifies all the efforts made to render parts anemic. Hence the various compressors and pieces of apparatus which are used for this purpose. Only inasmuch as it is known that ordinary glass itself filters out a large proportion of ultra-violet rays it becomes necessary, in order to obtain the best effects, to use compressors made either of ice, rock salt or quartz, since these easily permit the ultra-violet rays to pass through them. The instruments used now should be all provided with quartz plates and adapted to this purpose—hence the expense attached to such apparatus. It is desirable also that the patient be so exposed that the light shall fall perpendicularly upon the affected surface. Working with such rock crystal and with an electric lamp of 80 ampères Finsen claims to have destroyed the micrococcus prodigiosus in one minute, and to have practically disposed of lupus nodules so that they would shrink up and disappear after fifteen minutes' exposure.

This matter of the total exclusion of glass and substitution of quartz or rock salt is more important than has been generally appreciated. The violet rays easily pass through glass but the ultra-violet rays are almost completely excluded by it. Again the difference between the effects produced by the ultra-red and ultra-violet rays should be emphasized. The former, the heat rays produce more or less redness of the skin, which quickly disappears. On the other hand the actinic rays produce scarcely any reddening, while their maximum effect is not attained for from twelve to twenty-four hours.

Practically we have to produce the ultra-violet rays either by using sunlight, which limits the production, or by one of two artificial means: the utilization of the arc light or by electric sparks from a condenser. There will always be a certain disadvantage attaching to sunlight, namely the amount of heat radiation which must always be prevented by some filtering arrangement, and while copper sulphate solution *e.g.*, will answer this purpose it also takes out some of the other rays which one does not want to lose.

If an arc light could be provided with iron electrodes a much larger number of ultra-violet rays would be given off than are produced by carbon, but then the arc light so made would be a source of a large amount of radiant heat. Electric sparks are known to give off light of high actinic value and so-called condenser spark lamps have been devised and are now on the market by which a discharge is made to pass between two electrodes, which preferably are of iron. Such lamps are useless, however, unless they are provided with quartz fronts, or lenses.

The salts which ordinarily fluoresce are not so sensitive to the ultra-violet rays as to the Roentgen rays, and the fluoroscope cannot be used with the Finsen light.

The ultra-violet rays have this most peculiar property, that they can discharge a negatively electrified body, in which respect, of course, they differ from condenser sparks, which will discharge any charged body, from which it is evident that the condenser spark is very much richer in these rays than the arc light. They can also produce nuclei for cloud condensation in moist air and finally, in addition to this, they have a special action on the skin, at least of the higher animals, and on the entire tissues of the lower animals and plants, which has been already noted.

When tested carefully as to its transparency to the ultra-violet rays a sheet of glass one twenty-fifth of an inch thick proves to be as opaque as a piece of hard rubber one-fourth of an inch thick, or as the entire hand. The most transparent material is polished pure rock salt, which must, however, be kept both clean and dry in order that it may preserve its properties.* A condenser spark lamp has also this advantage, that it does not radiate heat and that only a simple cooling arrangement is required, and that while rock salt forms the best compressor a piece of ice may be advantageously used, since the anemia produced by this pressure is increased by its coldness and its opacity to radiant heat.

We thus have two therapeutic agencies affording us methods of treatment which are so new and to such an extent still on trial that we must hesitate lest enthusiasm run away with judgment in discussing their merits and their applicability.

Nevertheless the results of extensive experience

*At the meeting of the American Physical Society in Dec., 1902, Prof. R. W. Wood described and exhibited a screen which was transparent to ultra-violet light, while being opaque to the rest of the spectrum. Such a screen is very useful in photographing ultra-violet spectra, since it enables the overlapping spectra of other orders to be eliminated. The author showed an interesting lecture experiment in which the rays of the lantern, after passing through such a screen, were concentrated to an invisible focus, where a suitable fluorescent substance was excited. The screen was made by combining a gelatine film containing nitroso-dimethyl-aniline with copper oxide and cobalt glass.—*Science*, Jan. 30, 1903, p. 182.

may at least be formulated in the following safe and warranted conclusions:

1. They afford methods of treatment for extremely new growths of limited area and superficial character, which, while not exactly certain, are extremely promising.

2. They not only cause no pain, but tend to relieve pain, both superficial and deep, in a most pleasing and satisfactory way.

3. They are adapted to cases which can hardly be submitted to any other method of treatment, and they afford more hope in delayed or inoperable cases than does any other method of treatment.

4. It will be found that the odor of putrefaction may often be suppressed by their use and the putrefatic process itself checked.

5. Burns and intense dermatitis, so frequently noted when the treatment first came into vogue, may now be almost certainly avoided.

6. More than this they afford a supplementary method of treatment after operation, by which the benefits of the same may be enhanced and enlarged.

7. It is not necessary to intermit such work as the patient may be engaged in, in order to carry out the X-ray or phototherapeutic method of treatment.

Of course it is not fair to expect too much of such agents, especially of those so new. One of the most comforting aspects of their use is the relief from pain which they afford even when this pain is deep seated and of uncertain origin. Even such use of the X-rays as is called for in an ordinary fluoroscopic examination has been known to relieve pain, although by it nothing else was accomplished.

What it may accomplish in deep cases is as yet pure conjecture. Without entering into detailed reports, I am at least positive of this, that in certain inoperable cases of intraperitoneal cancer and tuberculosis, accompanied by more or less ascites, cathode rays have certainly relieved pain, retarded extension of the disease and apparently been of great benefit, even if such benefit prove but temporary. This of itself is of greatest value, and can be accomplished better in this way, perhaps after an abdominal section, than by any other measure with which I am acquainted.

The X-rays apparently will also relieve itching in certain instances, and may especially be used for removal of hair, for cosmetic reasons or in treatment of sycosis, of favus, of psoriasis, and will be found serviceable in the removal of those birthmarks which are covered with, or surrounded by, considerable growth of hair. So far as phototherapy is concerned it must necessarily find its widest range of application when the disease is limited to a small area and is superficial. Morris and Dore have shown (*British Medical Journal*, Feb. 9, 1901, p. 326) that there are certain skin conditions which are not favorable for phototherapy, especially such scaring as results from previous scraping, pigmentation by which the ultra-violet rays are intercepted, vascularity in those parts where a compressor of some kind cannot be applied, deep lesions, and those of skin or mucous membrane whose location makes it difficult of treatment *e.g.*, about the eye, in the nose, mouth, etc.

THE CURE OF ANAL FISSURE WITHOUT OPERATION; REPORT OF EIGHT CASES.

BY S. LEWIS, M.D.,
OF BROOKLYN, N. Y.

IT is greatly to be feared that the ready curability of fissure by stretching, etc., under ether has led to indiscriminate use of this method. Such seems markedly the trend of recent literature, viz., to recognize that many more, even the severe, cases are curable by simpler methods than has been supposed. (Boas, Hemmeter, etc.).

My own experience has been that the simple abrasions tend to spontaneous cure, unless local conditions, as hemorrhoids, have lowered resistance, that the fissure itself in many recent simple cases can be cured by any stimulating applications with proper constitutional treatment, while in the severe cases I have, partly by accident, been led to a course of treatment which has given such excellent results as to seem worthy of report.

My first patient came to me three years ago. History was briefly as follows: One year previous she had been in my service as interne at St. John's Hospital, suffering from sloughing perineum following an operation at home. Since leaving hospital she had suffered extreme constipation, movements being blood-streaked and followed by agonizing pain, lasting over two hours. She had been treated by three physicians, each causing her great pain and finally advising operation under ether. One had used a "caustic stick" repeatedly, without benefit.

On examination I found an "irritable ulcer" in the grasp of the sphincter and was struck by the similarity of its appearance to certain cases of indolent leg ulcer, in which, following the suggestion of a writer whose name I have unfortunately forgotten, potassium permanganate had been applied with success. Knowing that the usual methods must have been exhausted I applied this, as will be described, and dismissed her with little encouragement, but advice to submit to operation if she found no relief after two weeks' treatment.

The result astonished me so that I have since seized every opportunity of employing the method and have now, from my own work in private and dispensary practice and the kindness of medical friends, records of eight cases.

All were typical cases, suffering the usual agonizing pain. Four were chronic and had been advised to undergo operation. One had suffered so much as to repeatedly threaten suicide; another, although a most cleanly woman, had "not been able to get up will power enough to change her clothes, for three days."

In its essence the treatment consists in applying to the fissure and surrounding area a saturat-

ed solution of potassium permanganate and using a suppository containing sulphichthyolate of bismuth. Technic is of importance and is as follows: Patient in semi-prone position on table, supporting her own right buttock. On separating the folds at the mucocutaneous junction, as a rule, the outer extremity of the fissure or painful ulcer, or at least a red streak indicating its location can be seen. It may be hidden behind a sentinel pile and may be multiple. Cocainization, (6-per-cent. solution applied on cotton pledget for 10 to 15 minutes), is often required before satisfactory examination can be made and may have to be repeated on reaching fissure. If spasm exist I have passed a large flexible bougie and left in situ five minutes. (This is rarely needed.) A thorough digital examination may now be made, if desired. Expose fissure, cleanse gently with warm water and apply permanganate on tiny swab to fissure and whole surrounding area. A smarting occurs lasting two to ten minutes. No patient made more complaint than to say "that smarts a good deal."

After-treatment.—In contradiction to one of the leading authorities (Gant, Dis. of Rectum and Anus, p. 124), I am amazed to find the "severe pain and tenesmus" following the use of suppositories absent in my cases. I ascribe this to (1), the special action of the permanganate; (2), the satisfactory shape and consistency of the suppository employed, and care in its use. I have discarded a former favorite (a combination of Peru balsam and iodoform) and employ a suppository sold under the name of anusol. This affords an absolute uniformity of shape and consistency and presents a more astringent and stimulating action on the fissure and on hemorrhoids if present. Best of all, it pulpefies the stool, which is allowed to be *passed daily*, a much simpler method than that of Boas, who stops the movements for a week or more. In my worst cases I have inserted the suppository myself or instructed a competent nurse. It should be employed night and morning warmed till "slippery," then gently pressed against the anal orifice *on side opposite to fissure* until the sphincter relaxes and suppository slips in. In most cases it can be inserted by the patient. I cannot feel that ointments, as recommended by Gant, or powders (Boas), could be relied on to reach the involved area if applied by patient.

One suppository is ordered night and morning, the usual dietetic and medicinal treatment of constipation prescribed and patient told to report in two days. Severe cases are told to rest as much as possible, reclining. The worst are confined to bed.

Now mark the result. In every one of my cases the next stool has been loose, mixed with products of melted suppository and marked by *two or three minutes of smarting* in cases in which for days and weeks, even months, preceding the patients have after every stool rolled in agony lasting sometimes two hours.

Condition at next treatment: spasm and inflammation greatly lessened, ulcer covered by clean granulating area. Treatment as before but cocaine omitted, patient to report in four days or sooner if any pain exist. At third treatment, suppositories may be reduced to one daily, at bedtime.

Three of my cases have relapsed but yielded at once to repetition of treatment. My worst case, a sufferer for 20 years, kindly referred by Dr. Catlin, of this city, tore the mucous membrane almost through by a constipated movement two weeks after apparent cure. Under treatment she was healed within ten days. This patient was a deaf-mute and extremely anemic and debilitated. In view of the tendency to relapse all patients are instructed to avoid constipation, apply cold water daily and use an astringent ointment for months. Also to return at once if the least pain occur.

One word of theory. I believe the immediate relief of pain to be due to destruction of the sensitive exposed nerve-ends by the permanganate and the disinfection and stimulation of the raw surface, forming a protective covering of granulation tissue. To trauma of this tissue may be due the fact that *a second movement in a day is liable to be more painful than the first*, a symptom occurring in most of my cases which I have not seen recorded.

Previous to this treatment I have used the other applications as recommended (nitrate of silver, etc.), with greatly inferior results. The advantages of the suppository in after-treatment are obvious.

One word of caution. If treatment fail to give immediate relief there are probably other fissured areas present. Examine more thoroughly and if none found, cocainize and make the application "blindly." Enough improvement will follow to relax the sphincterial spasm and disclose the fissure.

THE THERAPEUTIC USE OF SUPRARENAL GLAND IN CERTAIN DISEASES OF THE SKIN.*

BY MARTIN F. ENGMAN, M.D.,
AND
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VULPEAU and VIRCHOW in 1856 demonstrated that the medulla of the suprarenal glands contained a reducing agent. Ten years later, Brown-Sequard, from his animal experiments, affirmed: (1) That these glands were necessary to life; (2) that they modify or destroy a substance which otherwise becomes a pigment; (3) that when the glands are destroyed or removed this substance collects in the blood; (4) that removal of these glands is fatal to the animal and that injection of the blood from such an animal into a healthy one produces generally fatal results.

Hans Strehl and Otto Weiss, working in the Physiological Institute of the University of Kö-

* From the Dermatological Clinic of Prof W. A. Hardaway, Polyclinic, Washington University, St. Louis.

nigsberg in 1900, report that the death of animals, in which the adrenals and accessories were removed, was due probably to the loss of nerve power or that the adrenals produce a substance which keeps up blood pressure or which destroys a substance derived from muscles or other tissues that accumulates in the blood and exercises an effect to reduce blood pressure when the glands are removed. The fact that animals die much more quickly after removal of the adrenals when the muscles have been previously tetanized favors the latter assumption.

Oliver and Schafer, Cleghorn, A. Gottlieb, Lewandowsky, J. N. Langley, and others find experimentally that by the administration of the suprarenal gland the tone of all muscles is increased, that the heart beats are greatly strengthened, that the blood pressure is raised through the action of the gland upon the muscles of the heart and vessel walls. J. N. Langley believes that only those muscles which are governed by the sympathetic nerves are thus stimulated. He therefore agrees with Lewandowsky that pupil dilatation from its use is due to this action upon unstriped muscle fiber. Lewandowsky caused the hair-muscles of a cat to contract and raise the hair by administering large doses of adrenals.

The results from the therapeutic use of the adrenals largely assist in confirming the assertions of the animal experimenters. The favorable influence of the dried extract and its active principle, adrenalin, isolated by Takamine, in ophthalmology and rhinology, especially its hemostatic and constringent effect, is acknowledged. Floersheim, Kenworth, Bates, Harrison, and others have used the dried extract internally with successful results in internal hemorrhages from the lungs, intestines and other viscera. Floersheim and Bates were the first to call attention to its beneficial action in valvular diseases of the heart. E. M. Houghton believes that it acts like digitalis in these cases, though its effect is much more temporary. Bates* refers to four cases of edema of the glottis in which the swelling was controlled by dropping the dried extract of the gland upon the tongue, a method of administering the remedy which is also much favored by Floersheim when a rapid effect is desired.

The published reports of the use of the gland in dermatology are limited to two articles; in 1900 Munro used it in acne rosacea both internally and locally. He obtained decidedly beneficial results by painting the reddened area with a solution of the extract of suprarenal gland, 1 part in 12, together with the administration internally of from three to six five-rain tabloids daily. Merie used strong solutions in pruritus vulvæ with very good results.

On account of its effect upon the muscle coats of the vessels and probably upon the vasomotor centers, we were led to try the gland internally in certain diseases of the skin due to deranged conditions of the vessels (of the vasomotor nerves) with exceedingly good results, which, in some cases, were so marked and rapid, that we feel justified in placing it prominently upon the list of remedies to be tried in these troublesome conditions. The dried extract has been the only preparation used and always in the form of a powder. The tablets have never been employed by us for fear that they would not be so readily assimilated as the finely pulverized and dried extract. The dose has been always gradually increased, as we have seen some rather untoward symptoms produced by too large a dose, such as violent nausea, dizziness, acute tremor. To children under four years of age one-half grain three times daily can be given with safety and gradually increased to two grains. Between the ages of four and twelve years one grain is the initial dose, gradually increased to three grains, three times daily. In older children and in adults two grains, gradually increased to six, may be used. The remedy should never be taken upon an empty stomach, especially not before breakfast, as quite violent purging, griping, nausea and vomiting can be caused, probably by its local effect upon the gastro-intestinal mucous membrane. This unpleasant action we have seen several times and have learned to warn our patients always to take the powder shortly after meals.

Several writers say that the drug is perfectly harmless and that a large dose will not produce any greater effect than a certain smaller quantity; that 60 grains, for example, will not produce any greater effect than five or ten grains, or whatever quantity happens to be the physiological dose for that patient. This has been contrary to our experience, and we do not understand how such a powerful remedy, producing such marked and rapid effects, can be a harmless one as well. We are always careful in its administration, not any more so than with strychnine, for example, and while it is true that we have seen no alarming symptoms resulting from its use, nevertheless we do not advise its indiscriminate administration. There is also a cumulative action upon the nervous system, although its stimulation of the heart muscle and the increase in blood pressure be transient. When long continued in fair doses, for a month possibly, in certain individuals the drug will produce a tremor of the extremities, which is increased by a larger dose. This we have seen in two patients; one of them, upon taking five grain doses three times a day a second time for two weeks presented similar symptoms as during the first course. From our experience with these two cases we are convinced that there is a cumulative effect upon the nervous system, the symptoms of which rapidly disappear when the administration of the drug is stopped, or which can be markedly and, to the patient, alarmingly increased by an additional dose.

The two patients referred to may have been, and no doubt were especially susceptible to this influence. Others under our care have taken the gland in as large doses and for as long a time as the cases in question without any unpleasant symptoms whatsoever.

*One of these was a case of Becker and another of H. H. Curtis.

The diseases of the skin, in which the gland seems to have any effect, are those produced probably by some toxic disturbance, exhibited by a derangement of the vessels or of the nerves controlling them, and in some instances it acts surprisingly; almost a specific. This favorable action unfortunately cannot be foretold by the nature of the case or its symptoms, but it has occurred sufficiently often in our experience to lead us to employ the remedy among the first prescribed in cases of this character. It is almost needless to add that we have often been disappointed in obtaining no result when one was expected, probably after observing a most happy effect in a case apparently similar in every respect.

The remedy has been tried in numerous conditions, in both public and private practice, with the result that we find it useless in conditions attended with chronic inflammation or with exudation of cellular elements; for instance, acne rosacea, eczema, even in the most acute stages, for when the process has advanced a step further than the dilatation of the vessels and slight exudation, we have repeatedly failed to notice any amelioration of symptoms. We have faithfully tried to produce some improvement in cases of acute erythematous and papular eczema, which, on account of their symmetry and acute onset, offered every hope of success, but in none of them did we notice the slightest change.

The striking benefit resulting in some cases of the class mentioned first encouraged us to report these results, and for purposes of illustration, a few of them will be briefly cited.

General Pruritus.—If, as Unna says, pruritus is often caused by a lack of tone in the capillary vessels of the skin, due to weak heart-action, the suprarenal gland, from its influence upon the circulation is an ideal remedy. We have found it so in several cases of idiopathic pruritus, in which its administration has been of marked benefit.

In every case, in which its use has been at all effective, a control of the pruritus has been the first observable result.

Chronic Urticaria.—Many cases of chronic urticaria are purely factitious, being due to a peculiar congenital or acquired irritability of the dermal tissues which react to the slightest trauma, causing the development of a wheal. The antipruritic effect, as we might term it, of the suprarenal gland is probably one factor in its markedly beneficial action in certain cases of chronic urticaria. In our experience four cases were entirely relieved by five-grain doses of the gland, given three times daily, without the assistance of any other drug, internally or locally. The gland appeared to have a rapid, specific action, at once relieving the pruritus, and prevented the development of wheals. In one of these cases the disease had existed for one year, the patient having been tormented by the development of a crop of large and very itchy lesions upon the slightest friction. The suprarenal gland was administered for a month or more and the patient has remained free from unpleasant symptoms since, though her skin is yet, as it always has been, extremely irritable.

We are inclined to attribute the good results from the use of the gland in urticaria and allied conditions not alone to its effect in causing cardiac stimulation, or the increase of muscle and vasomuscle tone, but to the probable neutralization of some poisonous or deleterious substance within the system. This neutralization may be brought about in any of the various ways described by physiological chemists. Such a view most probably can be sustained by the study of its action in a disease, which is clearly due to vasomotor irritability, this irritability in turn being due to some peculiar systemic condition, as, for instance in

Lichen Urticatus (Bateman).—The condition which is known under the name of Lichen urticatus and best described by Bateman and Tilbury Fox, is probably a very chronic factitious urticaria of childhood. The lesions occur first as small wheals, the cap or top of which is immediately scratched off by the child, leaving, from the additional irritation and trauma, a papule which becomes hard from the vessel dilatation going on to a more advanced process of inflammation. In one of the worst and most stubborn cases of this kind that we have yet seen, the left leg and thigh were put in a zinc-gelatine bandage for one week; at the end of this time, the dressing was removed, and the entire extremity was found to be absolutely free from any lesions, excepting the remains of old ones, while the limb which had remained free was found to be literally covered with lesions in all stages of development. This demonstrated to our satisfaction the purely factitious origin of this troublesome disease.

We have treated eight cases of this form of urticaria in childhood with suprarenal gland with complete success. Its action in three of these cases was that of a rapid specific, controlling the eruption within two days. In all of the cases excepting one cures resulted; that is to say, the eruption disappeared, and if it relapsed, was at once controlled by again administering the remedy. One case did not follow the treatment as directed and for this reason probably was not benefited. We know of no other remedy which will produce such a rapid and beneficial result in this condition. The patient's general appearance in several cases seemed to improve and the skin resumed its normal tone; the pruritus was relieved and the vessels ceased to react so readily to mild traumata.

From our observations upon lichen urticatus we are led to assume that, through some peculiar "nutritional" disturbance, the vessels or their nerves are at all times in a certain irritable condition, which, in some way without friction or trauma to the skin, may cause a pruritus, and when the area is scratched or rubbed, this so-called irritability of the vessels or other nerves leads to an abnormal reaction, with the production of the lesion. Suprarenal gland seems to assist in the neutralization, or to prevent the production of the toxic agent producing this condition. It

does not seem plausible to assume that its constringent action upon the muscle coats of the vessels or its direct effect upon the vasomotor nerves fully explains these results. Nevertheless, we were induced to try the remedy upon two cases of morphea, on account of this reputed effect upon the vessels, as both of these cases were remarkable on account of the extent of the violet areola about the patches.

In one case the redness about the patch was controlled and then disappeared while the gland was being administered; when its administration was stopped, the redness recurred. Thereupon the suprarenal gland was given at intervals for months. This case was one of those heretofore cited, which exhibited symptoms of a cumulative effect; however, the patient was closely watched for unpleasant symptoms, and the administration of the remedy was continued, as it seemed to control the disease and to cause the disappearance of active symptoms. This patient is still under observation, the disease being virtually well. He had two large patches of morphea, symmetrically placed on each side of the abdomen, and one in the center of the back. When we first saw him, the areas were each as large as the outstretched hand and were surrounded by a dull reddish-violet areola. At present faint, atrophic lines and a slight brownish discoloration mark the sites of the lesions. We do not wish to affirm that the drug in question was the only cause of the improvement in this case, as we know that such cases get well without any assistance. The second case of morphea was improving also, but the patient has not returned for six months.

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ON SIMPLICITY IN THE OPERATION FOR LACERATION OF THE CERVIX UTERI.*

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LACERATION of the cervix uteri is the commonest cause of postpartum hemorrhage. The immediate union of such a tear is not here discussed. Old laceration is the direct subject. This, however long it may have existed, produces no sure or significant symptoms, local or reflex, by which it can be suspected or recognized. It plays an active rôle in causing abortion and miscarriage and the very prevalent opinion that it often becomes the nidus for epithelial cancer is the chief cause of the great importance attached to its cure.

For natural reasons tears of the cervix are extremely common. They are diagnosticated by digital palpation and the introduction of the speculum.

Admitting the propriety and necessity of repairing this form of genital injury, when no more urgent disease exists or where there are no contraindications, it may be maintained that the greatest good will accrue to the greatest number when the successful operation is devoid of danger and shorn of its usual terrors.

These cervical tears of all surgical disease or injury are the most inviting and satisfactory to treat on the basis of greatest simplicity. The reasons for this are the following: The normal sensibility of the cervix uteri is probably not much greater than that of the gums and anesthesia, either general or local, is entirely unnecessary. The operation consists solely in denudation, apposition and retention of approved surfaces and requires no great surgical skill, technic or trained assistance. A minor plastic operation not prone to become a failure from ordinary bodily exercise, confinement is not required for more than a few days. The patient during the period of union enjoys the comforts and freedom of her own home. There is but one great after essential for success, namely, the non-infection of the wound.

To perform this operation under these conditions the writer proceeds in the following manner, and he will state that the only difficulty encountered is the amount of explanation and assurance often found necessary to be expended in order to convince the patient that the pain is trivial and that benumbing agents are needless.

The subject lies in the dorsal position on a table with the parts involved directly in the light from a window. The neck of the womb is exposed with one or two blades of Simon's speculum. The anteroposterior poles of the cervix are secured with narrow volsella forceps. By traction they bring the uterus downward to be sufficiently accessible for work. They also outline the diameter of the restored canal. The torn lips are denuded on both sides with scissors; but little tissue is cut away. The prepared surfaces should be smoothly raw and bleeding freely. From two to three silkworm-gut sutures are inserted on each side with a curved Brun's or perineum needle. After irrigating the wound and dusting it with iodoform, the sutures are securely tied and cut short. An antiseptic tampon is introduced against the neck of the womb and the patient placed in bed. In a day or two the tampon is removed and voluminous boric acid douches are practised until the removal of the sutures in three weeks. In three or four days or a week at the longest the patient is allowed to rise daily and pursue her usual mode of life, being solely enjoined from unusual effort or the harder forms of female employment. The result in a good termination is a uterine cervix, which in appearance is very like the virgin state. When partial or total non-union is found it is an easy matter to obtain the patient's consent to repeat the operation as before practised. The

* Read at the Meeting of the Therapeutic Society of the District of Columbia, February 14, 1903.

writer has followed this method in more than a dozen cases and in no instance has the course or result been found unsatisfactory.

In calling attention to the ease and certainty with which a lacerated cervix can be made whole, the objects in view are that its proper subjects may be given a rational and common sense understanding of what is alone necessary to repair the injury and prevent future mishap or disease. How little or not at all are the dangers of the operator's work and with what slight restraint, loss of time and expense, the same can be done in their own homes and family surroundings. Above all that the amount of pain inflicted is so little that no anesthetic need be used.

TUBERCULOSIS OF THE LARYNX AND ASPIRATION TUBERCULOSIS OF THE LUNGS FOLLOWING DERMATITIS BLASTOMYCETES.

BY OTTO T. FREER, M.D.,
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THE cases of dermatitis blastomycetes, or infection of the skin with pathogenic forms of yeast fungi reported to the present time show that it is so seldom followed by tuberculosis that the sequence of the latter upon it may be merely a coincidence.

The total number of cases of blastomycosis collected is too small to permit of conclusions in regard to this question and it is therefore of interest that the case reported to-night adds one to the list of blastomycotic infections followed by tuberculosis. Dr. Frank Hugh Montgomery* in his summary of his own and Dr. James Nevins Hyde's observations on cutaneous blastomycosis, states that among 32 cases gathered from the literature, one, his own, died of miliary tuberculosis and that two other patients presented symptoms merely suggestive of tubercular disease, while the remainder were free from it. My own search in the literature failed to add to the list of tubercular cases following blastomycosis.

Dermatitis blastomycetes seems to have obtained recognition as a disease entity among the majority of observers. This is due to the painstaking and scientific work done by Hyde, Montgomery, Busse, Buschke, Gilchrist and others. As Dr. Montgomery intends to publish a detailed account of the cutaneous affection in the case reported here I shall confine myself to a description of the unusual course of the tubercular disease following it.

History: Date Oct. 17, 1901. The patient's age is 25 years. His history presents nothing of note with the exception of a chancroid acquired ten years ago. The only possibly luetic symptom succeeding this was a sore mouth which lasted a month.

His present trouble began two years ago with the appearance of a skin affection in front of his left ear over the zygomatic process. The eruption, as he describes it, was in the beginning only as large as the end of his finger, was at first red and later became covered with a scab. When this was removed he says that the surface underneath looked ulcerated and as if perforated with pinholes. The scabbing skin affection slowly spread until it presented a raised surface as large as the hand of a child. Under Mr. Montgomery's care almost complete disappearance of the eruption was obtained by means of large doses of potassium iodide, a drug which has an almost specific effect upon the lesions of blastomycetes.

Dr. Montgomery made the diagnosis of dermatitis blastomycetes by means of microscopic sections and cultures and by repeated examination of many slides demonstrated the absence of tubercle bacilli.

Four and one-half months ago the patient noticed a tickling sensation in his throat which gradually changed to slight pain in swallowing, This symptom left him after a few weeks, but returned and became more and more severe until on Sept. 12, when first seen by me in the clinic at Rush Medical College, he could hardly swallow fluids and no solids at all. Attempts to swallow caused suffocative coughing spells so that he dreaded to eat and drink. Up to the middle of August his voice remained unaffected, when gradually increasing hoarseness set in. This remained until the middle of October, when it changed to a mere whisper within two days and has remained so since. When first seen the patient was not emaciated, seemed in good general health and said that he did not think that he had had fever at any time. Examination of the lungs at this time showed healthy signs and there was no cough.

When first seen on Sept. 12, the skin affection mentioned occupied the anterior half of the left concha, the meatus auditorius externus and an area extending from the level of the eyebrow down to the lower border of the lower jaw and

Fig. 1.

Tuberculous Ulceration of the Larynx with Destruction of the Epiglottis.

followed to the centre of the cheek. It had a deep red color and was covered with crusts that so filled the ear that hearing was impaired. Inspection of larynx presented the conditions shown in the drawing sketched from life. (Fig. 1.) An extensive ulcer occupied the site of the epiglottis which was destroyed all but a small stump at its

*Cutaneous Blastomycetes, Journal A. M. A., June 7, 1902.

posterior and right border. The ulcerated surface also involved the left aryteno-epiglottic and pharyngo-epiglottic folds and the surface of the false cord on the left side. The vocal cords were deep red in color but normal in form. Quantities of thick muco-pus covered the ulcer and filled the laryngopharynx and upper larynx. When the secretion was removed the ulcerated surface was seen to be covered with granulations while its borders were clean cut without surrounding edema. The pharynx and mouth at this time were normal. During the latter progress of the ulceration the left cord became immobilized and granulations sprouted from the left processus vocalis. The border of the soft palate, the uvula and the pillars of the fauces on the left side became red and infiltrated. Shallow erosions with a white surface appeared on the under surface of the tongue and smaller ones on the pillars and soft palate.

The ulcer at the first examination seemed almost typically syphilitic because of its well defined border, rapid progress and quick destruction of the epiglottis while the parts of the larynx below were at first not involved. The patient's good general health argued against a tuberculous process as did the lack of chronic edema of the larynx. The absence of a hard infiltrated border and base excluded the likelihood of carcinoma. The patient was, therefore, given large doses of potassium iodide. Very rapid subjective improvement followed and seemed to confirm the diagnosis of syphilis. The pain in swallowing ceased after a few days and the patient stated that food no longer entered his windpipe, but the betterment was evidently suggestive and the ulcer steadily spread while the pain returned. The cutaneous lesion, however, began to heal quickly under the influence of the iodide of potassium and in a few weeks cicatrized all but some scabbing portions on the border. This is the usual effect of the drug on the lesions of blastomycetes. At this time great quantities of tubercle bacilli were found in pus swabbed from the ulcer while sections made from a piece of the epiglottic stump removed with Heryng's double curette were seen to be invaded by tubercle bacilli in such numbers as are seldom seen within the tissues, (Fig. 2) the diagnosis was therefore changed to laryngeal tuberculosis.

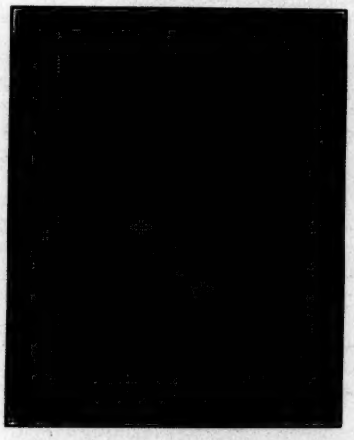
At this time, Oct. 20, the patient began to have fever, ranging from 99° to 103° F., with emaciation and rapidly increasing weakness. His chief complaint was of exhaustion and a constant sense of suffocation which amounted at times to extreme distress. The physical signs could not account for this as they were negative with the exception of scattered sibilant râles and some mucous clicks with diminished respiratory murmur over the left apex. The patient died on Nov. 23, about 5½ months after the beginning of the tubercular disease in his throat.

The post mortem was performed by Dr. E. R. Le Count, from whose minute and extensive report, obtained from the pathological laboratory of Rush Medical College, I have abstracted the essentials.

In the right pleural cavity adhesions were found at the apex of the lung, in the left one at the apex, base and posteriorly. Over the entire surface of both lungs small hard nodules were felt which elevated the pleura. They were largest in the apex and upper part of the lower lobe of the right lung, and were pale, elevated, grayish and in many places coalescent. The fissure between the upper and middle lobes of the right lung was obliterated by firm adhesions. On section the lung showed many nodules similar to the subpleural nodules scattered diffusely through the tissue. In many places these coalesced. A small cavity and smaller ones of the size of buckshot were found in the apex of the left lung.

The larynx showed the loss of the epiglottis and ulceration described above. The right cord

Fig. 2.



Tubercle Bacilli Grouped in the Tissue of the Epiglottis.

and both arytenoid cartilages were movable but the left cord was thin and bound down by cicatricial tissue, and this accounts for its immobilization. There was ulceration of the lining of the left ventricle of Morgagni, on the upper surface of the left cord and ventricular band. The surface of the large ulcer which had destroyed the epiglottis contained cicatricial tissue mingled with granulation tissue. There was no evidence of perichondritis.

Many miliary tubercles were found in the liver, spleen, adrenal bodies, mediastinal and mesenteric lymph glands. Sections from all of these organs and from the lung tissue were stained and the presence of tubercle bacilli demonstrated. Cover slip preparations from pus obtained from the lung also showed tubercle bacilli in enormous numbers.

Three guinea pigs were inoculated with tissue from the adrenals and lung. The result in two of these animals was negative as far as tuberculosis was concerned as they died in a few days before it had time to develop. In the third pig gen-

eral miliary tuberculosis had developed after six weeks.

Dr. Le Count's summary was: Tuberculosis of the larynx; aspiration disseminated miliary tuberculosis of both lungs; ulcerative tuberculosis of both apices; miliary tuberculosis of the kidneys, adrenals and liver; ulcerative tuberculosis of the small intestine; acute lymphadenitis of the mesenteric and tracheobronchial glands; fibrous pleuritis; blastomycetic dermatitis of the face.

The hope entertained by Dr. Montgomery and myself that the blastomycetic organism would be found in the tissues of the larynx and in other parts of the body were not realized. Montgomery's statement, therefore, that blastomycosis has not as yet been found upon the mucous membranes of the body still holds good. It is probable that the long-continued blastomycetic ulceration of the face was the source of entrance of the tubercle bacilli into the lymphatics and later into the tissues of the larynx and base of the tongue. This seems the more likely, as the greatest ulceration in the larynx was upon the left side.

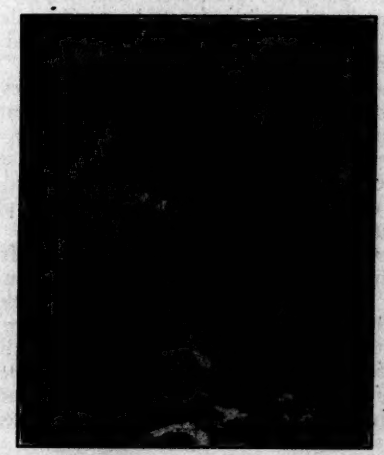
The microscopic sections made from the piece of epiglottis removed during the patient's life were prepared by Dr. Oliver S. Ormsby, who studied them with me. They showed the great intensity of the tubercular infection. As a rule sections of tubercular tissue show but scattered bacilli, often none can be found, but in these specimens they may be seen lumped in clusters and scattered profusely among irregular groups of leucocytes and epithelioid cells. The bacilli are thickest in the leucocytic groups which resemble miliary abscesses. Other sections show ordinary miliary tubercles with central giant cells. P. Baumgarten*, in an exhaustive consideration of the histologic action of the tubercle bacilli, says that when large numbers of bacilli of extreme virulence produce infection the miliary tubercle may resemble a miliary abscess, as the stage of infiltration with leucocytes occurs almost immediately without more than a rudimentary attempt at the formation of the epithelioid and giant cells from the fixed tissue cells. Therefore, a microscopic section like those we obtained from the epiglottis, showing these characteristics, indicates an acute and malignant type of tuberculosis. The rapid spread of the disease in the organism depends not only on the susceptibility of the individual attacked but also upon the number of the bacilli invading the tissues, their greater or less virulence and, hence, varying rapidity of proliferation. As my patient was a vigorous man it is probable that his resistance was good and that he was infected with a peculiarly active type of tubercle germ, which invaded the tissues in enormous numbers.

The tubercular invasion of the lungs was more recent than that of the larynx and occurred in the acute disseminated form called aspiration tuberculosis. The early destruction of the epiglottis together with the great quantity of semi-fluid pus swarming with tubercle bacilli produced by the large area of ulceration were important factors in causing the almost explosive pulmonary invasion. Without the epiglottis to protect the air passages below, pus, food and drink constantly entered the trachea and bronchi and particles were readily sucked into the smallest air tubes where they caused tubercular bronchitis, peribronchitis and bronchopneumonic areas. From these the infection was readily spread by means of the peribronchial, interlobular and intralobular lymphatics.

Ziegler* mentions, as sources of aspiration, tuberculosis inspiration of tuberculous matter from bursting of a softened tuberculous lymph gland into a bronchus, or of pus from cavities in the lung, or of tuberculous pus from laryngeal ulcers. Ziegler says that, though the aspiration type of infection in tuberculosis is not common, there are instances on record where aspiration has suddenly infected the whole of both lungs and the virulent particles have penetrated every ramification of the bronchi. The usual site of lodgment of the infecting particles, according to Orth†, is where an end bronchus divides into the alveolar passages. The tubercle first develops in the walls of these finest air tubes but rapidly invades the surrounding alveoli.

In order to prove that the infection of the lung, in the case under consideration, was primarily bronchial and later peribronchial and alveolar, series sections of lung tissue were made for me and studied by Mr. J. W. Dreyer, a senior student

Fig. 3.



Bronchus Destroyed by Caseous Bronchitis Due to Aspiration Tuberculosis.

at Rush Medical College. As the result of his investigation a small bronchus (Fig. 3) was discovered, was followed into its end branches through several sections and showed plainly that the tuberculous process began in the lumen of the small bronchi and followed these into the terminal

*P. Baumgarten, Berliner klinische Wochenschrift, 1901, p. 1102.

*Ziegler, Text-book of Path. Anatomy, Am. Ed. pp. 843 to 858.
†Orth, Lehrbuch der speciellen pathologischen Anat., 1887, p. 473.

branches and alveoli. It was also evident that the alveoli adjacent to the bronchioles were invaded by direct extension of the tuberculous infiltration through their walls, that is by tuberculous peribronchitis.

The bronchus mentioned has lost all that is typical of the normal histological structure but may be recognized as a bronchus by its division into branches. Its lumen is greatly distended by a necrotic, caseous mass, which is surrounded by a circle of cells whose axis is directed across its center and which probably formed the bronchial epithelium, but can no longer be recognized as such. Surrounding these cells may be seen circular elastic fibers and outside of this the tuberculous cell proliferation has hidden all alveolar structure over a large area. Beyond this again the alveolar structure becomes recognizable, many of the alveoli being filled with blood, others distended with leucocytes, indicating bronchopneumonic areas. Many circular or oval spots of cheesy degeneration were visible over the entire area of the sections, showing exactly the same structure as that of the bronchus mentioned. They were surrounded by the same tuberculous tissue and also marked the site of destroyed bronchi with tuberculous peribronchitis. In places leucocytes were seen gathered into collections like miliary abscesses, showing the great virulence of the tuberculous process. Large giant cells were frequently found.

Looking at the slides with an ordinary convex lens gave a better general view of the process than did the microscope. The centers of the masses that filled what were once the lumina of the smallest bronchi were stained red while about them the rest of caseous matter contained in the bronchi formed a pale circle.

The blood-vessels were intact, another evidence that the process was aerogenic. The great number of bronchioles and lobules stopped up by the tuberculous process explain the patient's sense of suffocation, while the even distribution and smallness of the nodules explain the scanty physical signs.

Doubtless aspiration tuberculosis is a frequent termination of tuberculous laryngitis even where there is an older focus of tuberculosis in the apex of a lung. I can recall other cases where laryngeal tuberculosis ended rapidly with the lighting up of quick pulmonary consumption. The rigidity of the epiglottis usual in advanced laryngeal phthisis favors the entrance of tuberculous pus into the lungs.

A. Fraenkel*, mentions the aspiration of blood flowing from a tuberculous pulmonary cavity during hemoptysis as a cause of dissemination of tubercle bacilli throughout the lungs and the development of acute aspiration tuberculosis. His description of the anatomical findings in cases of rapid tuberculosis of pneumogenic origin accords perfectly with the post-mortem findings in the lungs in the case described.

*A. Fraenkel, Berliner klin. Wochenschrift, 1902, p. 491.

MEDICAL PROGRESS.

THERAPEUTICS.

Treatment of Hay Fever.—With the advent of the season, the usual crop of papers on the subject is beginning to appear. Sir PHELIX SEMON (Brit. Med. Jour., March 28, 1903) presents an article peculiarly concise, interesting, and to the point. It deals with the results obtained by Prof. W. B. Dunbar, the Director of the State Institute for Hygiene of Hamburg. It will be remembered that this gentleman succeeded in isolating from the pollin of certain grasses a toxic substance which seemed to bear a very direct relation to the cause of hay fever. The author conducted a series of experiments in the course of which he isolated the toxins and produced antitoxins from thoroughbred horses and used them upon himself and eight other people. He draws the following conclusions: First, that there can be no doubt that Professor Dunbar has succeeded in isolating a toxin which when introduced into the eyes or nostrils of people predisposed to hay fever, produces the well-known symptoms of the disease. In people not predisposed, the result is negative. In persons already suffering from hay fever, the effects of the toxin are as variable in intensity as are the attacks of the affection itself, both locally and constitutionally. Prof. Dunbar's antitoxin certainly produced immediate disappearance of the subjective and after a few minutes, great amelioration of the objective symptoms. The mixture in equal parts of a toxic solution (1 in 500) and the antitoxic serum suffices to neutralize the specific effects of the toxin. The effects of the antitoxin appear in some instances to be sufficient to prevent a reappearance of the subjective symptoms. In other instances, repeated installations of it are necessary to reproduce normal conditions. At the present moment we are only on the threshold of an accurate knowledge of this condition, and while we do not emphatically state that we are shortly to be able to give absolute relief to sufferers, it is conservative to say that sufficient work has been done to justify broad statements in that direction.

Treatment of Hyposystolia with Anasarca.—In a case in which the heart was much embarassed, owing to the peripheral resistance from capillary and venous stasis, brought on by pressure upon the walls of the small vessels from an extremely edematous condition of the tissues, C. TREVISANELLO (Policlin., March 21, 1903) obtained great relief for his patient by using Southey's method of draining off the transuded fluid from the lower extremities. He describes the procedure in detail as follows: The patient is seated upon the side of the bed, with the legs hanging down. In the upper third of each leg, from one to two trocars, carrying silver canulas twenty-one millimeters long and thirteen-tenths of a millimeter in diameter, are inserted. The trocars are then withdrawn, leaving the canulas in situ. Rubber tubes connected with suitable receptacles for the fluid are then attached to the lower openings of the canulas, and the flow of fluid through the latter is started by gentle massage or compression of the leg. In the case so treated, dyspnea ceased, the pulse became stronger, and the general condition greatly improved after each draining. The procedure was repeated in all six times; the amount of fluid withdrawn varying from 500 c.c. to 1700 c.c. In the intervals between the local treatments, digitalis was given; this acting well upon the heart after lessening of the peripheral resistance through the decreased edema following withdrawal of the transudate, though previously it had failed to relieve. Mild purgation was also used to assist in the dissipation of fluid from the tissues.

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SATURDAY, MAY 30, 1903.

EDEBOHLS' OPERATION.

AT the recent meeting of the Association of American Physicians in Washington (See MEDICAL NEWS this week, p. 1049), as the result of the report of a successful case of removal of the kidney capsule for chronic parenchymatous nephritis by Dr. Tyson, of Philadelphia, there was an interesting discussion showing the present status of the operation suggested by Dr. Edebohls some years ago. As was well said, the therapeutics of chronic nephritis is so hopeless from a medical standpoint that any surgical procedure that holds out the promise of even amelioration of symptoms for a time with retardation of the progress of the case would be extremely welcome. If it does not involve, and Edebohls' operation does not, necessarily any serious risk in its performance, then it is sure to attract the attention of even the most conservative members of the medical profession.

In Dr. Tyson's case, the patient was suffering from chronic parenchymatous nephritis following scarlet fever. Anasarca was very marked and the patient was confined to bed and was constantly growing weaker. Every possible expedient for alleviation by medical means having been tried in vain, the operation of stripping the capsule from the kidney was consented to by the mother. The operation was done in two stages, one kidney at a time, two months apart. There was marked improvement after the first operation, and after the second operation the urine became practically normal. Before this there had been considerable amounts of albumin and quite a few tube casts. As soon as the child was allowed to get up and go around the albuminuria returned to a certain extent, but the patient's general condition continued to be eminently satisfactory. The edema of the extremities and of the face, as well as the ascites, disappeared completely after the first operation and did not return. The patient has gained in weight and strength and is considered by her relatives to be cured of her kidney trouble, though there are still some traces of it, as shown by the albumin in the urine.

In the discussion three cases were reported from Boston, two of them as successful as the Philadelphia case. One of the operations proved a failure, the patient dying from nephritis six months after its performance. In this case at autopsy complete regeneration of the capsules of the kidneys was found to have occurred. Another successful case in a patient suffering from chronic parenchymatous nephritis following scarlet fever was reported from Toronto. It is evident then that the operation is attracting widespread attention and that the operative results in certain cases which have proved absolutely hopeless under the most careful medical treatment have been eminently satisfactory.

The operation seems specially advisable in young persons suffering from chronic nephritis following scarlet fever. As there is a growing impression that many of the insidious cases of Bright's disease which show symptoms unexpectedly about middle life are due to an almost latent nephritis initiated by scarlet fever, this is a very interesting consideration. Whether the albuminuria that persists after operation will prove to be really indicative of a progressive nephritic lesion remains to be seen. It is well known from the statistics of life insurance companies in recent years that while applicants suffering from albuminuria without casts or with only hyaline casts are more likely to be carried off by intercurrent disease than other individuals, they are by no means necessarily doomed to early death from Bright's disease. If the operation will relieve the severer symptoms of ascites and anasarca with the indigestion consequent upon progressive uremia, even though it should not arrest the albuminuria entirely, there seems every

reason to hope that it will fulfil much of the promise that has been made for it.

At the same meeting a series of experiments on dogs was reported, in which decapsulation of the kidneys was promptly followed by regeneration of the capsule. In the one unsuccessful operation reported from Boston this same regeneration of the capsules was found at autopsy. It is possible that certain points in the technic of the operation, or its performance in particular ways may prevent capsular regeneration and so give all the benefit to be derived from direct adhesion of the kidney to other structures without the intervention of the fibrous capsule. It is evident from reports so far made that the benefit derived in these cases is not due, as in certain of Mr. Reginald Harrison's analogous operations for acute nephritis, to any relief of function tension in the kidney by the slitting of the capsule, since in practically all the cases thus far operated upon it is distinctly noted that no such tension could be demonstrated as present. It seems more probable that the theory of the new blood supply furnished to the kidney by the adhesions formed after decapsulation is the real explanation of the successful results so far obtained. The appearance of fat in the urine immediately after the operation and also the ready absorption of substances painted on the decapsulated kidney show that kidney tissue is readily permeable from without its substance as soon as the fibrous capsule is removed. There seems every reason to look forward with confidence to the further development of this operation with the idea of finding the limits of its application and the cases in which a good prognosis from its performance can be reasonably predicted. So far those who have taken up the operation have been commendably conservative in their methods, and while its application mainly to cases that were otherwise hopeless and, indeed, sometimes almost moribund, makes an extremely severe test for the new operative procedure, it has justified not a few of the expectations even under those trying circumstances. It would seem that the operation will eventually achieve for itself a distinct place in the therapeutics of an otherwise constantly progressive and ultimately fatal affection, that at the present time is inexorably cutting off some very promising lives.

MEDICAL LICENSING BOARD QUESTIONS.

THIS is the season of the year when the medical licensing boards of the various States are preparing the questions for the June examinations. As it is at the examinations at this season of the year that by far the greater majority of the medical graduates apply for licenses, it seems a fitting occasion to say another word with regard to the character of the questions that have been asked in the past with the hope of bringing about an improvement in this important matter. There is no doubt that in spite of the numerous protests that have been made by some of the most prominent medical teachers, and even the faculties of medical colleges, there are still entirely too many unsuitable questions, often mere "catch" questions, included among the examining boards' lists each year.

The President of the National Confederation of State Medical Examining and Licensing Boards, in the course of his official address at the thirteenth annual meeting of this association, held at New Orleans, May 4, 1902, gave a list of some questions which he considered had been answered very ludicrously by medical students in recent years in his own experience. We hope that those who listened and laughed at the presumedly ridiculous answers to these questions were not entirely in sympathy with the character of the interrogatories as stated. Practically all of the questions over which the worthy president was so hilarious were of the kind which to our thinking should not be found at all among the list of questions to be asked either of the graduate medical student or of the physician of many years' standing with any idea of determining his practical fitness for the exercise of the profession of medicine.

In the MEDICAL NEWS for May 9, 1903, p. 897, will be found some of the questions that were answered ridiculously. One of them is, "What is Morbus Cæruleus?" Since the New Orleans meeting we have asked three medical editors, all of them actively engaged in the reading and criticism of medical articles for publication, and all of them have hesitated as to the answer they would make to this question. Now, medical editors may not know the practice of medicine. There are those who ungenerously insist that it is better for a medical editor not to know too much about the practice of medicine, since this is almost sure to spoil his faith in medical theory and hurt his power to write confident editorial opinions with regard to practical application of remedial measures. Medical editors do, however, know the meaning of words. They must necessarily, if the columns of their journals are not to be disfigured by verbal errors. Morbus Cæru-

leus, as the name for congenital cyanosis, due to congenital malformation of the heart, is not a commonly employed term, and besides it is not a commendable designation. The affection is not a disease entity to which the name morbus would properly apply. Morbus has etymologically the sense of an acquired pathological condition, and does not well represent a permanent state due to an enduring anatomical anomaly. When the familiar "blue baby" becomes metamorphosed into the subject suffering from morbus cæruleus, it is a little difficult of recognition, even by those who may be quite familiar with the condition by actual experience. Unless one has heard the term employed in just that sense, one is at sea as to what is intended by it.

Other questions suggested by the President of the National Confederation of State Medical Examining and Licensing Boards, as ludicrously answered, are, to our mind, quite as unjustifiable examples of this tendency, unconscious though it may be, to ask catch questions. For instance, Cheyne-Stokes breathing is really of too little clinical importance to make a question with regard to it count for one-tenth in the examination of a medical student's knowledge of practical medicine. Unless he is a physician engaged in very active hospital practice in large cities, the practitioner may not see a case of Cheyne-Stokes breathing in many years. What is more, when he does see it, his recognition of the symptom complex will usually not be of any material help to him in the treatment of his patient, since sufferers are commonly doomed to speedy dissolution. The question, What is podagra? seems scarcely a suitable one to ask of would-be practitioners in America. We have learned quite recently that gout is more frequent in this country than we were accustomed to think, but this knowledge has only come to the teachers of medicine within the last year or two. While the word podagra is familiar enough in England, it is very seldom used in this country. Besides, it is not a complete descriptive term for gout, since gout affects other parts of the body, notably the fingers and ears, quite as frequently as the feet. Why not have asked the question simply, What is gout? We sympathize sincerely with the medical student who mistook podagra for the equally unfamiliar pellagra, and answered that it was poisoning due to the ingestion of rye bread that had been affected by disease.

While we have picked out the flagrant examples cited at New Orleans, because the failure to answer them on the part of the medical student was a subject for merriment on the part of examiners assembled, and was supposed to indicate a lack of proper training at medical schools, we would not wish to be considered as thinking that any one man is more responsible than many others for the frequent peculiar questions that find their way into the examination papers of State licensing boards all over the country. In the last few years such questions have been asked as, What is Laennec's cirrhosis of the liver? What is Hanot's cirrhosis of the liver? and in spite of the priority of the English observer in the matter, describe Basedow's disease, instead of the better Graves' disease, if a man's name has to be used or the descriptive title exophthalmic goiter. We realize, of course, that it is not easy to pick out suitable questions and yet avoid repeating questions that have been asked in recent years, and have for that reason been specially "boned up" by those who are studying only to pass, and with regard to whom Huxley once said, "They study to pass and not to know, and outraged nature takes her revenge—they do pass and do not know." Medical examiners are well paid for their services, and so should be expected to accomplish this difficult task satisfaction.

We have spoken only of the questions asked in the practice of medicine, because surely in this department at least there is no need to look for far-fetched questions. If there are abuses here, how much more likely are they to occur in the theoretic sections. There is need for the most zealous care on the part of examining boards to prevent abuses creeping in in these matters that distinctly lessen the prestige of the medical licensing system. Legislators are only too glad to have an excuse to refuse the extension of protection to the medical profession, and complaints of this kind made by medical teachers are apt to have an effect beyond the sphere of the matter actually involved.

HURRY AND IRRESPONSIBILITY IN MEDICAL EDUCATION.

A SUGGESTIVE and almost pioneer article (entitled "How Can the Standard of the Medical Profession Best Be Raised?"), in a recent number of *American Medicine*, advocates the lengthening of the medical course to at least six years. The need for this advance in medical education the author finds in the obvious fact that already an unseemly and most unscientific sense of hurry pervades

every live medical school, while, more disquieting still, medical science is now developing and spreading far beyond the possibility of being by any means whatever encompassed in any three-year or four-year course. Adequate and dignified knowledge of medicine, and certainly all real medical wisdom, is, it is claimed, by this disastrous *rush* made quite rare and in the generality of colleges quite impossible.

Now this appeal certainly is a timely and perhaps prophetic entreaty not only for more time, more thoroughness, and more dignity in preparing for the life-practice of a profession than which none is more serious or more dignified, but it touches on a matter or two besides on which one hears and reads even less than on the inevitable doubling of the length of the medical course. Thus the author pleads for some sort of personal acquaintance with the candidates for the medical degree, for a partial and adapted return to the preceptor system, now with our modern educational methods, going out of use. Two reasons may be suggested why every medical student who expects to practise should be personally known to and guided by some competent, broad-souled representative or other of his faculty; one reason being that his labors thereby may be adapted to his individual needs and tastes, the other that the officers of the college may be reasonably sure before he is let loose on a more or less innocent public, that the candidate is morally fit to become the arbiter of life and death over a portion of the people and curator of the morals of many more. Medical students need much more personal and individual attention than they get, for obvious reasons; why they do not get it is scarcely less obvious.

This is the period, in our civilization, of the rapid invention and introduction of machines for making things easily and quickly which were formerly made laboriously by hand,—our ancestors of even two generations ago knew nothing of machine-made shoes and less, oh shades of Æsculapius, of machine-made physicians. Alas for the medical educational "quick-lunch," which gives no manner of time for the digestion of the scientific viands which are acquired and which even allows no choice, scarcely of any sort, to its unsuspecting patrons. The young and the old, the dyspeptic and the hearty, the mentally fat and the mentally lean, the active and the idle, the man and the woman, each must eat what is on the bill of fare and pay for it, or, leaving it, go on hungering for the medical-science food which they so properly and wisely crave. Rush 'em through and turn 'em out to digest or to indigest, as their multitudinous constitutions warrant! Hurry them through and grind them out all alike in the same sort of mill with the same energy and hurry of resistless swirl and breaking,—and that when no two mothers' sons of all the yearly thousands are anywhere near alike and very many as opposite in capabilities, in interests, in promise, in intentions, as their psychophysical uniqueness can make them.

The other part of the problem demanding some sort of personal surveillance over medical students is of a different nature but it comes in part from the same causes and has like importance in medical economics and in the profession's honor. Some means, it is apparent, should be devised so that medical faculties might really know the students and refuse to graduate those of them who are unfit to assume the responsibilities of the physician. One method or one aid in doing this would be to lengthen the course, thus allowing of smaller quiz and demonstration and laboratory classes with the greater consequent personal familiarity between instructor and student.

This latter question is not in any sort a matter of religion, and need not be put even on a basis of ethics. It might be handled as purely a matter of business on a business basis, for whatever increases the public's respect for and confidence in the medical profession will increase not only the life-long satisfaction in being a member of that profession but oftentimes its monetary rewards, more or less, as well. Above all these considerations, the honor of the profession is debased when the medical graduate, despite his Hippocratic oath and his acquired dignity, deserts the standards of his profession, publishes his opinions as opposed to animal experimentation, or to vaccination, becomes a quack, or in other ways seeks wealth at the expense of the general medical esteem. This is the phase of the matter which raises the demand for personal scrutiny of the underlying character of medical students to an insistence almost imperative. The medical school which shall first show the moral and mental vigor to announce requirements and selection in this direction at the risk of being called names for a while, will soon welcome a multitude of the best of students for its own reward and will lead the way where all the other colleges will soon see fit to follow it.

Obligatory Disinfection After Death from Tuberculosis.—In the city of Budapest, disinfection after death from tuberculosis has been made obligatory.

ECHOES AND NEWS.

NEW YORK.

Medical Libraries.—The sixth annual meeting of the Association of Medical Librarians was held Saturday, May 16, 1903. A large number of librarians and physicians representing the medical libraries throughout the country assembled in the morning at the Library of the Medical Society of the County of Kings, Brooklyn, N. Y., and after an inspection of the building were entertained at luncheon at the Union League Club by the local members, Dr. William Browning, Dr. J. M. Winfield and Mr. A. T. Huntington. The scientific session was held in the afternoon at the New York Academy of Medicine, the President, Dr. William Osler, in the chair. Papers and discussions were contributed by Mr. C. P. Fisher, of Philadelphia; Dr. T. C. Lee, of Minneapolis; Mrs. G. W. Myers and Dr. E. H. Brigham, of Boston; Mr. J. S. Browne and Dr. W. S. Dennet, of New York; Mr. A. T. Huntington, of Brooklyn, and others. The officers elected for the ensuing year are as follows: President, Dr. William Osler, of Baltimore; Vice-President, Dr. Abraham Jacobi, of New York; Secretary, Mr. Albert T. Huntington, of Brooklyn; Treasurer, Dr. George D. Hersey, of Providence; Executive Committee, Mr. John S. Browne, of New York; Mr. Charles P. Fisher, of Philadelphia; Dr. James M. Winfield, of Brooklyn; Manager of the Exchange, Miss M. C. Noyes, of Baltimore. The meeting adjourned to meet June, 1904, at Atlantic City, N. J. A full report of the proceedings of the meeting will be published in the *Medical Library and Historical Journal* for July, 1903.

Tent Hospital for Consumptives.—A number of the patients in the wards of the city's tuberculosis infirmary, on Blackwell's Island, began the open air treatment last week. To this end several tents specially constructed for the accommodation of the sick have been erected on the lawn of the Metropolitan Hospital. They are provided with wooden floors, and a wall of the same material rising to the height of three feet surrounds them. The tents are made from heavy canvas, and by the use of stoves an equable temperature can be maintained in any weather. Canvas flaps serve the place of windows, and are so distributed that the maximum amount of sunlight can enter. The porous cloth permits the passage of a constant current of fresh air. This method of securing for the patient fresh air and sunlight, prime factors in the cure of consumption, is the ideal one. This is the first hospital camp in this country established at municipal expense, although the form of treatment has been in vogue in Europe for years. The most gratifying results have invariably followed its employment, a large percentage of the patients ultimately recovering. The earnest work of the Charity Organization Society's Tuberculosis Committee is largely responsible for the present experiment. Of the 400 patients now occupying the wards of the tuberculosis infirmary, it is expected that at least 100 will be under canvas within a month. The patients are delighted with the prospect of exchanging their residence in the hospital for the tent life. Each tent will accommodate but a small number of persons, and these can group themselves according to their tastes and inclinations. Not the least important factor in the light and air treatment is the solarium, or glass house, which is to be speedily erected. Here the patients can take daily sunbaths. The tents themselves will be occupied as late in the season as the weather will permit. This miniature hospital camp is but the initial step looking toward the establishment of a similar institution on a gigantic scale. The health authorities have been offered a twenty-acre tract in Orange County rent free for two years for that purpose, and Dr. Lederle has already addressed a letter to the Mayor for municipal assistance to carry out the project.

Manhattan Dermatological Society.—Regular meeting held May 1, Dr. L. Weiss presiding.

Dr. L. Weiss presented the following cases: (1) Lupus erythematosis in a woman about thirty-six years old; the bridge of the nose, adjacent cheeks and naso-orbital angle affected; patient under treatment for the past three months, with no decided improvement, along outer edge of eruption new and distinct nodules were observed. Dr. Gottheil spoke favorably of Finsen therapy; he was able to discharge three cases cured out of four so treated; (2) a case of fibromæ cutis, in a woman thirty-six years old; the tumors varied in size from a pinhead to a quarter coin; the face was likewise involved; back and chest were studded with varying size tumors; the largest tumor was on the right thigh; thyroid and thiosinnamine were suggested for treatment; (3) a case for diagnosis; a male patient, about forty-five years old, showing a cyanosed condition of both feet extending to the ankles; above ankles about two dozen purplish elevations, pea-sized, much resembling the lesions of atrophic lichen planus; the feet were slightly swollen and painful; the latter when walking or standing much; the opinion of most of the members that the condition was typical of sarcoma pigmentosa cutis, the local asphyxia being considered characteristic.

Dr. Edw. Pisko presented a girl of six years with alopecia capitis totalis; the process began at the age of six months, the hair falling out in patches until entire scalp was involved. A bad prognosis was given. A typical case of erythema nodosum was shown by Dr. Pisko in a girl of eight years. Dr. Pisko also presented his case of xanthoma diabeticorum to show that despite treatment the urine still shows five per cent. of sugar and new lesions appearing on the face. A case of mycosis fungoides of four years' duration and a case of sarcomatosis multiplex cutis was likewise shown by Dr. Pisko. Dr. Weiss believes both cases to be multiplex fungoides, merely differing in degree. Drs. Oberndorfer, Abrahams and Gottheil are of the same opinion. Dr. Gottheil claims that in these two conditions the microscope is not a reliable guide to differential diagnosis.

Dr. J. Sobel presented a case with the following history: A child of ten months had a patch of eczema on cheeks and shoulders; thirteen days ago boarded a ship and was vaccinated; two days later numerous vesicles appeared on the body which ruptured, leaving excoriated surfaces which later crushed over; when seen two days ago the shoulders presented two large bullæ; these have since ruptured, leaving a red excoriated weeping vegetating surface; the child has also pediculi capitis, general body uncleanliness and the recent vaccination site shows infection. He called it impetigo bullosum, with secondary infection. Dr. Gottheil said the shoulders reminded him of a dermatitis vegetans. Dr. Geyser saw a case of infected urticaria which in many respects resembled this case.

Dr. Kinch regards it as a pus infection with resultant lesions. Dr. Weiss saw some resemblance to actinomycosis. Drs. Pisko and Oberndorfer mentioned pemphigus vegetans.

Dr. A. Bleiman presented the following case: A man of seventy-eight years for a period of forty years had a small pigmented mole over right molar region, which never gave him any trouble until one year ago, when it attained the size of a 3-cent piece; up to six months no change until accidentally struck by a piece of wood; it grew to the size of a quarter dollar; it is purplish in color, semi-fluctuating, and shows slight ulceration

along its edges; it is absolutely painless and does not annoy patient except by its presence. No glandular involvement and otherwise patient is in general good health. Dr. Abrahams regards it as epithelioma. Dr. Gottheil said the characteristic peripheral hardness of epithelioma was absent; he called it angio-sarcoma. Dr. Pisko regards it as epithelioma; Dr. Oberndorfer as sarcoma; Dr. Sobel as malignant melanosarcoma; Dr. Weiss as angiosarcoma and advised radical measures. The danger of metastasis should not be overlooked.

The following cases were presented by Dr. W. S. Gottheil: (1) Case for diagnosis; female patient twenty-eight years old; married; hoarse since infancy; operated upon five years ago for appendicitis; a uterine tumor of some size is apparent; five weeks ago an eruption of pea-sized vesicles appeared on abdomen and upper thighs; these ruptured, leaving red plaques which spread in circumference to the size of a quarter; a similar outbreak of vesicles followed by the same process appeared six days ago; these plaques are round, red and scaly. Old lesions now show pigmentation. Dr. Gottheil called it erythema syratum. Dr. Pisko regards it as a specific lesion. Dr. Abrahams could not agree with the latter two; similar eruptions within so short a period spoke against syphilis; some lesions observed in the mouth suggested to him the probable diagnosis of pemphigus foliaceus. Dr. L. Weiss said a pemphigus would not be so limited in extent and in healing would leave deeper pigmentation and deeper scarring; in the existence of a uterine tumor there may be some connection with a condition described by Dühring as dermatitis gestationis.

(2) A case of hereditary syphilis in a girl of eighteen years; the double interstitial keratitis resulting in blindness, the deafness, scars, orifice and the fissured lips at angle of mouth, he considered characteristic.

(3) A case for diagnosis; a boy of ten years, showing circular red patches on arms, thighs, abdomen and chest, covered with yellowish green crusts; the patches gradually enlarge to size of a 25c. piece, the crusts fall off, leaving a circular pink patch, with pale centers, raised margins and slightly desquamating. The oldest lesion is on the left thigh and is 3x4 inches, and seems to have attained its dimensions by coalescence of small circular patches; this patch is three months old; patches elsewhere vary between one and three weeks' duration. Dr. Kinch called it impetigo contagiosa; Dr. Abrahams parasitic eczema; Dr. Pisko herpes tansurans circinatus; Dr. Sobel herpes tansurans or impetigo circinatus; Dr. Bleiman thought of favus infection with clinical manifestations of a herpes tonsurans. Dr. Weiss termed it circinate psoriasis with marked seborrhea.

(4) A case of dermatitis atrophicans; patient stated process began on the feet several years ago and characterized by redness, extending to the knees; the hands and forearms became subsequently involved; skin over tibia shows thinning and atrophy, while on arms there appears to be induration and thickening of skin. Dr. L. Weiss regards the case as one of scleroderma; the process on legs being the final stage, characterized by atrophy.

(5) A case of hypertrophied lingual tonsil; situated at base of tongue, it interfered with deglutition and speech. Dr. R. Abrahams presented his case of scleroderma to show result of treatment with thyroid, patient taking 15 grains per day with 1-30 strychnine; the patient was very much improved, and takes the thyroid with no bad effects. A second case presented by Dr. Abrahams was one of atrophia striatum in a male patient with a history of tuberculosis pulmonalis; the striæ were observed on both shoulders as pearly white streaks several inches long.

Dr. B. F. Ochs showed a woman of forty years with a gumma of the left leg occupying region of the calf; the gumma was ulcerating and probing through this aperture revealed a specific periostitis.

PHILADELPHIA.

Typhoid Still Epidemic.—Typhoid fever still persists and the death rate is apparently increasing. Last week the new cases were 262 and the deaths 31 as compared with 247 and 27, respectively, for the preceding week. The authorities state that the only way to abate the epidemic is to boil all drinking water.

Woman's Medical College.—It is stated that twelve of the thirty members of the recent graduating class have been appointed hospital residents in this city, New York and Boston. This is regarded as a high compliment to the institution. The commencement address was this year delivered by former Surgeon-General Sternberg.

Resignation of Dean Dudley.—Dr. Pemberton Dudley after seven years of service as Dean of Hahnemann Medical College has tendered his resignation, to take effect at once. The cause of the resignation is apparently a lack of agreement between the dean and the remaining members of the faculty regarding the maintenance of order and discipline. Dr. Dudley retains his position as Professor of Hygiene and Institutes of Medicine.

Boycott of Retail Druggist Threatened.—Considerable commotion in the retail drug business of this city has been caused by the efforts of the Retail Drug Association to compel certain members to cease underselling the others. A "minimum price-list" has been issued and at least one firm claims that the Association has threatened to prevent wholesalers supplying them if the list is not complied with. If this be done the firm will apply to the courts.

Bryn Mawr Hospital.—Mr. Clement A. Griscom, President of the International Navigation Company, has donated the hospital a sum sufficient to equip a complete laboratory for bacteriological work. The laboratory which has already been begun will be situated in the basement of the recently enlarged hospital. It will be conducted by Dr. W. Bradford Eaton, who has been appointed resident physician and pathologist to the institution.

Homeopathic Wards for Philadelphia Hospital.—An ordinance authorizing the Director of the Department of Health to establish five wards in the Philadelphia Hospital for homeopathic treatment has been approved by City Councils' Committee on Charities and Correction as a substitute for the ordinance to convert the old Municipal Hospital, at Twenty-second street and Lehigh avenue, into a city homeopathic hospital. That the ordinance will pass is not yet known. The wards provided for include men's medical and surgical, women's medical and surgical, and a combined medical and surgical for children. A former homeopathic member of the Board of Charities states that separate buildings are preferred, but that the substitute provided will answer if they are guaranteed independent treatment and independent control of the clinic. Of the 400 homeopathic physicians in this city, ninety-five per cent. are in favor of a city hospital for homeopathic treatment.

Smallpox Gaining in Pennsylvania.—The prevalence of smallpox in the lumber regions of Potter and Clearfield counties was the chief consideration of the State Board of Health at its meeting in Philadelphia, May 23. An epidemic of smallpox has existed among the lumbermen of Cross Fork, Potter county, for at least six months, and 75 cases are said to exist there at present. The appropriation of $50,000 by the last legislature for the use of the Board of Health has made pos-

sible a thorough search of the region west of the Allegheny Mountains for concealed, neglected and unreported cases of smallpox. The investigation was also extended to isolated localities on the eastern slope of the Allegheny Mountains. Many cases of the disease were discovered in this way, and the search is being extended by the State authorities to the infected localities in an effort to stamp out smallpox. It was stated at the meeting of the board that because of the spread of contagious diseases throughout Pennsylvania since the Spanish-American War the routine work of the State Board of Health had increased 50 per cent. within the last year.

Insanity Increasing.—In his recent report to the Board of Managers of the Friends' Asylum for the Insane, Dr. Robert H. Chase, Superintendent and Physician in Charge, makes some interesting statements regarding the increase of insanity and the care of insane patients. He says: "The question, 'Is insanity on the increase?' is often asked, but it is one that does not find accurate solution, owing to insufficient data. Even when registration is found to be correctly made, the results based thereon are not apt to be fully trustworthy, in consequence of so many factors entering into the problem. From the best information at hand, we conclude it is probably true that there is still an increase in insanity. In the United States immigration has a potent bearing on the results of these computations. This may easily be seen when it is considered that while only one-eighth of the population is foreign born, one-third of the insane belong to this class. At the beginning of the fiscal year 144 patients, 58 men and 88 women, were on the rolls of the asylum, and at the close of the year, after deducting discharges and deaths 149. There were 102 patients admitted, a number not marked as exceeding or falling below that of recent years, but at the same time it is relatively large compared with some of the kindred hospitals of like size. It is well," says Dr. Chase, "that the lifestream which feeds the hospital should not be allowed to stagnate in a too sluggish flow of its incoming and outgoing channels. A changing population, more or less active, has an animating influence upon the medical staff as well as the nurses, stimulating them to fresh endeavor and checking the paralyzing tameness of a too stable household of chronic cases. After a patient has reached the full benefit of the sojourn it is of decided advantage commonly to him and hospital alike that a change be made." In reference to the moral treatment of the patients, Dr. Chase says: "At the present time no feature in the treatment of the insane is more highly valued on every hand than occupation, systematically applied and judiciously carried out. We have appreciated the applicability of the study of botany to our patients, and have introduced this season into our diversions a class in 'nature study.' The subject matter is to take a wide range, and the instruction is to be made as varied and as interesting as the teacher's skill can make it. When the season is inclement the class will be entertained indoors. Much interest has already been aroused in the patients, and it is probable that it will increase as the full scope of the plan is unfolded to them."

CHICAGO.

New County Hospital Wards.—The Building Committee of the County Board decided a day or two ago to erect a contagious disease ward and a children's ward at the County Hospital, the first to accommodate 150 cases, while for children and infants there will be 130 rooms. The estimated cost of the two buildings is $125,000, and work upon them will be commenced speedily. The contagious ward will be three stories high, with elevator service. It will be built on the west side of the hospital, seventy-five feet from any other building, and having dimensions of 80 by 150 feet. It will practically be a separate institution. The whole building will have a system of ventilation which will entirely change the air in all wards and rooms every twelve minutes. The equipment of this building has been decided upon according to the suggestions of Dr. W. L. Baum, who has charge of the contagious diseases at the hospital, and of other physicians who have made a specialty of these maladies.

Lying-In Institutions are Exempted from Drastic Regulations.—Lying-in hospitals were placed in the category of general hospitals and excluded from the regulations recommended by the City Council Health Committee yesterday for institutions intended for sufferers from drugs and liquors, for epileptics and for victims of contagious diseases. The committee recommended for passage the ordinance requiring the consent of a majority of property owners for the establishment of such institutions, which are considered nuisances in many neighborhoods. The appearance of a large committee of distinguished physicians and of women active in women's work brought about a speedy recognition that lying-in hospitals could not be considered among those institutions requiring consent of property owners. The action of the committee, if concurred in by the City Council, will place Chicago on the same plane as all the European cities with regard to lying-in hospitals. In Europe the latter institutions are considered as general hospitals and absolute necessities. The amendment to section 48 of the building ordinance, including hospitals of this character among the so-called nuisances, came up for discussion, but it did not take long for the committee to decide that lying-in institutions should be exempted.

Mercy Hospital Extension.—An addition 200 feet long by 47 feet deep has been planned for Mercy Hospital. Consent of property owners will not have to be obtained in order to proceed with this work.

Deaths from Pneumonia.—This disease caused 172 of the total 586 deaths recorded during the week ended May 16th, from all diseases, excluding the 46 from suicide and violence. This was nearly one-third per cent. Since the first of the year there have been 2,659 deaths from pneumonia, and 1,190 from consumption, or nearly 125 per cent. more from pneumonia.

Increased Requirements for Rush Medical College.—Beginning with this summer, this institution will demand twelve majors, in addition to a four years' high school course; one-half of these must be in special preparatory studies for medicine, and must include chemistry and elementary biology. In June, 1904, the requirements will be further increased, and a year later the completion of the junior college course or its equivalent will be required.

Continuous Intrauterine Irrigation in Grave Puerperal Sepsis.—Dr. Edson B. Fowler read a paper before the Chicago Medical Society, May 20th, on this subject, in which he reported a case that was successfully treated. He said that Haynes had collected 13 cases of irrigation for puerperal fever which came more or less under his notice. He referred to two deaths, one of Chastrain's, from the passage of the irrigating fluid into the tubes, and one from rupture of a diphtheritic uterus. Langenbach and Schede each mention two cases of recovery, while Richter reports 20 cases with two deaths. The author presented a table of 129 cases, with 12 deaths, besides 52 cases of Sneugeriff, who does not state the number of deaths, and Veit, who had ten fatalities, the exact number of cases not being given. Antiseptics were used in 125 of the 129 cases, with a mortality of about 10 per cent. The other four

cases were successfully treated with sterile water only. The technic employed by the different men is much the same. They use a rubber sheet, or Kelly pad, and an adjustable fountain syringe with a double or single tip fastened in the uterus or held by the hand. In the author's case there was employed a No. 8 English metal catheter in a syringe which was gradually elevated from one to three feet. He found that complete flushing of the uterine cavity was best and probably only accomplished when the tip was slowly rotated, and that this method had the additional advantage of preventing undue or prolonged pressure on one area. The quantity of liquid employed varied from one gallon an hour to ten gallons, as used in one case by Manseau. The variation in temperature was even greater, with the idea that the heat killed the germs and made the spores inert. The dangers and objections raised to the treatment are, forcing of septic fluid through the Fallopian tubes, and peritonitis; air and other emboli; hemorrhage; puncture of the uterus; rupture of the uterus; pressure necrosis and ulcers; pain; exhaustion of patient by the irrigation; shock; poisoning of patient with the antiseptic; difficulty of using the treatment outside of the hospital. The author answered these objections at length. In brief, practically all serious objections to the treatment can be overcome by the use of sterile water at a properly grade temperature and pressure for the case in hand.

GENERAL.

Syphilis and Wet Nurses.—The physicians of Milan have recently been notified by the health authorities of that city to report every case of syphilis seen in a wet-nurse; the latter is then to receive treatment in a hospital or be placed under medical supervision in her own home.

Diphtheria Spreads at Newport Station.—Diphtheria appeared last week among the naval apprentices on the Constellation and on the monitor Amphitrite, where many boys had been sent in the hope that they would not become infected with the disease, which is epidemic at the station. Diphtheria appeared among the apprentices a fortnight ago, and as many as there were tents for were put in camps on the island. The disease, however, gained ground, and 740 boys were transferred from the barracks to the Constellation and about one hundred to the Amphitrite.

Leprosy Among Soldiers.—That the United States army is threatened with many cases of leprosy as a result of service in the Philippines and Cuba is the opinion officially expressed by Captain J. C. Gilmore, commanding the Fifth company of coast artillery, in Savannah, Ga., according to the *Herald*.

Announcement.—Messrs. Lea Brothers & Co. have pleasure in announcing that conforming to many requests they issue the superb work on the Eye, Nose, Throat and Ear, edited by Drs. Posey and Wright, in two volumes, as well as in a single volume. Volume I. will be known as Posey On the Eye, and covers completely the subject of Ophthalmology. It contains 690 pages, 358 engravings and 19 plates in colors and monochrome. Price, cloth, $4.00, net. Volume II. will be known as Wright On the Nose, Throat and Ear, and contains 570 pages, 292 engravings and 16 colored plates. Price, cloth, $3.50, net. The convenience of this plan, especially for text-book purposes, is obvious.

Obituary.—Dr. John B. Burdett, one of the oldest physicians of Hudson county, N. J., died on Thursday at his home, 545 Summit avenue, Jersey City, from a complication of diseases. He had been ill for nearly three years. He was born in Bergen county, N. J., on Sept. 21, 1833. He studied medicine with the late Dr. Lewis A. Sayre of New York, and was graduated from the New York College of Physicians and Surgeons in 1856. He had practised in Jersey City since 1858. He was a prominent Mason, having been a charter member of Highland Lodge, and was also a member of the Jersey City Heights Gun Club, and a Director of the Hudson City Savings Bank. He is survived by a widow and two daughters.

Dr. John A. Bitting, of Sherman, Texas, died at San Antonio, May 14, 1903. He had gone there only a few days before on account of ill health. Dr. Bitting was born at Germanton, Stokes county, N. C., October 13, 1850. In 1872 he graduated in medicine at the Jefferson Medical College, Philadelphia. Four years later, in 1878, he moved to Sherman, Tex., where he has lived continuously since. For twenty-five years he has possessed the confidence and done the practice for a large number of the most substantial citizens of the town. He has also been the medical examiner for a number of life insurance companies, among which were the New York Life, The Equitable, The Mutual Benefit, N. J., The Northwestern Mutual of Milwaukee and several others. His work in this line was done with absolute fairness, and with perfect precision. Several years ago he had taken special courses in bacteriology, pathology and microscopy, which made him a thorough and valuable examiner. In fact, one of his leading characteristics was thoroughness, both in the important matters and in the details of professional work. Being true to himself, "it followeth, as the night the day, that he was true to others."

CORRESPONDENCE.

POLYCYTHEMIA WITH CHRONIC CYANOSIS.

To the Editor of the MEDICAL NEWS:

DEAR SIR: In connection with the editorial on Polycythemia with Chronic Cyanosis, and thanking you for the flattering suggestion to call the disease by my name, it should be clearly understood that to Saundby and Russell, of Birmingham (*Lancet*, 1902, I, 515), the credit is due of recognizing that the condition was in all probability a new clinical entity. To Vaquez, R. C. Cabot, and McKeen is due the credit of reporting the first cases.

Sincerely yours,

Baltimore, Md., May 23. W. OSLER.

EXPERT TESTIMONY.

To the Editor of the MEDICAL NEWS:

DEAR SIR: This subject seems to be the ghost that will not down.

I have seen the doctor, bright, unscrupulous, ever ready to destroy a rival by the uplifted eye and a shrug of the shoulders, and especially eager to ally himself with counsel on the side of a question that insured antagonism with the general sentiment of the profession in his community.

Perhaps I should not smile when I admit that for twenty-five years or more I have held steadfastly an opinion upon the proper way to settle the question of expert testimony; always intending to give, but modestly refraining from giving that idea to the world. It is this:

The court should have sole power in the selection of the expert, who should be selected from a knowledge of his character and standing in the profession, as a specialist or otherwise, and without question as to his views upon the matter under investigation.

No lawyer ever selects a professional witness until he has first converted him into a partisan.

S. S. TURNER, M.D.

Fort Yates, North Dakota, May 12, 1903.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

A CASE OF ACROMEGALY AND GOITER—A CASE OF BILHARZIOSIS—TREATMENT OF TRACHOMA BY X-RAYS—MICROSCOPICAL APPEARANCE OF SECTIONS THROUGH THE ORBIT OF A CHICK IN WHICH THE LEFT EYE APPEARED TO BE CONGENITALLY ABSENT AND THE RIGHT EYE ABNORMALLY SMALL—A CASE OF LIPOMATA.

Dr. H. A. LEDIARD (Carlisle), read a paper at the Clinical Society of London, March 27, on a case of acromegaly and goiter. The patient was a woman, aged forty-three years, who was born and had always lived in Cumberland. She had had amenorrhea and headache dating from the last confinement, ten years previously. The features were characteristic, especially the lips, nose, lower jaw and tongue, as were also the speech and expression of the face. The thorax was large, the ribs being massive and the hands being broadened. Sugar had been at one time present in the urine. For some years a bilateral goiter had been evident, but in June, 1902, the patient was sent to the Cumberland Infirmary for operation on account of dyspnea with stridor and dysphagia due to pressure. The left side of the goiter was then removed and all these symptoms were relieved. The patient was exhibited to the Society, and her feeble muscular power was demonstrated. Radiographs of the hands and other parts were exhibited, together with the goiter which had been removed and microscopic slides. The usual features of acromegaly not present in this case were kyphosis, bilateral hemianopsia, sweating and cyanosis. There was no trace of the general increase in size sometimes present, but the features of the face and the limbs were so greatly enlarged that the patient could not be recognized by her relatives and the muscular power was feeble. Dr. Lediard stated that there had been no change in the pulse or temperature since the operation, but the patient has gained several pounds in weight.

Dr. ANDREW DUNCAN, before the same Society, read notes of a case of bilharziosis. The patient was a man, aged thirty years, lately in the Second Battalion East Kent Regiment. He had been fighting in the Orange River and Cape colonies, and was in Lord Roberts' march to Pretoria. In May, 1902, he began to experience itching at the end of the penis and a frequent desire to urinate with great straining, but had at this time no hematuria. He also had a lump in the left groin and great pain in the lower part of the back. After rest the lump went away. He returned to England in June, 1902, and on arrival first noticed a small clot of blood in his urine. Previously to the appearance of this he had severe pain and burning in the urethra. In July, there being a decided increase in the hematuria, he went into a country hospital and was there sounded for stone and examined by the Roentgen rays. During this time also growths appeared around the anus for which mercury was prescribed on the supposition that they were specific. In January, 1903, the case was seen and at once recognized as one of bilharziosis by Mr. James Cantlie, who sent him to the Branch Seamen's Hospital, where he was admitted under the care of Dr. Duncan. On admission the patient was anemic and the urine contained blood, mucus, a small amount of albumin and numerous ova of bilharzia. In the perineum there was a slight swelling over the râphe, which disappeared after being fomented. There were three growths around the anus; one was conical and about half an inch in diameter, and the other two were flattened with broad bases of half an inch. These on removal were seen to be papillomatous swellings stuffed with the ova of the bilharzia. The feces passed by the patient were found to contain ova. There were no evidences of any growths in the rectum as far as the finger could reach. With regard to the ova passed by the rectum according to Lancarol's teaching, the spines of these when occurring in the intestinal vein were always lateral, in contradistinction to the terminal spines of the ova in the vesical veins. In the treatment of this disease great difficulty had always been experienced, but Lieut. Lelean called attention to the benefit exercised by methylene blue given in 4-grain doses three times daily. He had found that ova died in less than fifteen minutes when the stain was run under the cover glass. Dr. Duncan's patient had been treated according to Lieut. Lelean's directions, but up to the present time there had been no appreciable difference in the amount of the hematuria; the deposit in the urine glass seemed less, but the color of the urine was the same. For the first few days after his admission, and before the methylene blue was administered the patient had been given tabloids of suprarenal extract, but without any effect. Dr. Duncan now proposed to try liquid extract of male fern, as suggested by Mr. H. M. N. Milton of Cairo.

Mr. M. S. MAYOU (Cricklade) read a paper on the Treatment of Trachoma by the X-rays. The idea first occurred to him when treating rodent ulcer and lupus of the eyelid, on finding that no serious damage was done to the globe. The first case cured in this way was shown by him last June; since then several others had been successfully treated. The histological changes in living tissues exposed to the X-rays were then described, the most important change being a superficial irritation, capable of being increased and stimulated by the simultaneous application of other irritants, such as copper sulphate. Most of the resulting leucocytosis was found around the trachoma nodules and the cells of rodent ulcer after X-ray treatment of these diseases, the reason for this being that they similarly acted as irritants. Cases of prolonged exposure of the globe to the X-rays were then instanced, where the only bad effects produced, and those only temporarily, were falling out of the eyelashes and conjunctivitis; this latter trouble was also found among workers in the X-rays, and in them it could be prevented by the use of lead glass spectacles. Mr. Mayou found, with Fuchs and Kreidl (1896), that there was no bleaching of the visual purple by the X-rays: his experiments were carried out on rabbits and frogs. The results of treatment by the X-rays were then compared with those produced by copper sulphate, jequirity and other irritants, and it was pointed out that there were less destruction of tissue and subsequent cicatrization, as well as less pain, with the former method. The eyelids were everted (the operator's hands being protected by bismuth ointment and cotton gloves); the cornea was only exposed in severe cases where pannus was present. Owing to the infiltration set up, difficulty was found in deciding when treatment should cease. Out of nine cases five remained well, one cleared up but recurred two months later, two others improved and were still under treatment, and in one case of corneal opacities following trachoma the vision had improved from perception of light to counting fingers at three feet. The advantages of this treatment were: (1) there was less resultant deformity of the lid; (2) it was painless; (3) pannus cleared more thoroughly. The disadvantages were (1) all patients did not react well to the X-rays, and (2) it was sometimes difficult to tell when treatment should cease.

E. T. COLLINS and J. H. PARSONS communicated a paper at the same meeting describing the microscopical appearance of sections through the orbit of a chick in which the right eye appeared to be congenitally absent and the left eye was abnormally small. In the right orbit a ring of hyaline cartilage like that of the sclerotic was found, inclosing partly pigmented tissue similar to that of the chloroid. There was no lens, retina, pigment

epithelium or optic nerve; there was thus a complete failure in development of all structures derived from neural epiblast. The essential element of an eye was a nervous mechanism which served to receive visual sensations for transmission to the brain. When this mechanism was completely absent the condition might be accurately described as one of anophthalmos, notwithstanding the presence of some of the subsidiary structures developed from mesoblast. As far as Mr. Collins and Mr. Parsons had been able to ascertain, there was no case of congenital absence of the eye in which it had been satisfactorily shown by microscopical examination that the mesoblastic structures were entirely absent. On the left side the chick had a microphthalmic eye in which the lens had failed to become separated from the cornea. The capsule of the lens was adherent to the substantia propria of the cornea, Descemet's membrane having failed to develop. The adhesion had obstructed the growth of the iris forwards; above it had turned back and crept around the posterior surface of the lens; below its growth had become arrested.

F. J. SMITH, at the Hunterian Society, March 18, showed a case of multiple lipomata. The patient was a man, aged sixty years, who first came under notice in September, 1901, for pain in the region of the heart, which had been present on and off for a year. He had lost 28 pounds in weight, and complained that solid food produced great pain. The abdomen was rigid and the liver was slightly enlarged and tender. The case was diagnosed as one of probable malignant disease of the stomach, but the patient improved very rapidly under treatment by bismuth and opium. He was again seen in February, 1902, still complaining of some pain in the lower chest on the left side, and there was then found to exist an obscure nodular swelling just below the ribs. Diagnosis was still obscure and the case was watched with some interest. By May extensive subcutaneous growths had appeared above the clavicles and on the ribs and arms with signs of obstruction of the deep veins—enlargement of the subcutaneous veins of the chest—but he again improved very much under bismuth and opium and the arms diminished in circumference by four inches. The only other point of interest obtained was that he suffered from free epistaxis in association with the strain of vomiting. On admission to hospital in March, 1903, his state was as follows. He was apparently a fairly well-nourished man; superficial examination showed that above the clavicles and on both upper arms there was a diffuse and profuse growth of what felt like subcutaneous fat; on both forearms there were lumps varying in size from that of a walnut to that of a golf-ball with an elastic, semi-fluctuating feel, freely movable on the muscles, but incorporated with the corium; in fact, with all the physical signs usually associated with multiple and diffuse lipomata. The thighs presented a similar but much less marked condition than the upper arms. On the tendons of the wrist and on the tendon of the rectus femoris on each side there were one or two small lumps firmly adherent to the tendon sheaths. On the left first rib at its junction with the sternum and over the right pectoralis major were one or two lumps of a much finer consistency, feeling suspiciously like glands infiltrated with some form of growth. The veins on the left side of the chest in front were rather more prominent than was usually the case, though not sufficiently so to suggest serious blockage of large, deep veins. Examination of organs gave no indications of disease, the air entered both lungs freely to the base without adventitious sounds or alteration of the natural ones; the heart beat was regular in rhythm and the sounds were satisfactory; and in the abdomen there was nothing to be felt that could be called abnormal, unless it was a little tenderness to palpation in the upper abdomen generally. Dr. Smith gave the above details, or rather, called the attention of the Fellows to the above points, and then considered the diagnosis. He stated that in his opinion there could be no doubt that the majority of the lumps were lipomata, but he was in doubt whether there was not also some glandular involvements; he hoped to be able to persuade the patient to allow one of the quasiglandular lumps to be removed for microscopical examination. He promised a further communication on any new facts in the case.

SOCIETY PROCEEDINGS.

THE AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, held at New Orleans, May 5 to 8, 1903.

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SECTION ON THE PRACTICE OF MEDICINE.

THIRD DAY—*Continued.*

Typhoid Fever not Special to Cities.—Dr. Fulton showed that typhoid fever was not special to cities, but according to the last census formed an important factor in the death rate also of small towns and rural populations. The typhoid curve of mortality is in inverse ratio according to the twelfth census to the density of population. In places where the population is below 100 to the square mile the typhoid mortality was 67 per 100,000. There is need of careful prophylaxis in the country as well as the city. The first important factor for this is the recognition of the disease. The next is the exercise of faithful precautions with regard to feces and urine, especially this last. These precautions must not be abandoned when convalescence has set in, as is so often the case, but must be kept up for many weeks and even months, at times after the patient is up and about. The use of urotropin will make the urine non-dangerous when it would otherwise be infective.

Dr. John H. Musser, of Philadelphia, in discussing typhoid fever, said that the Widal test does much to clear up doubtful diagnoses and consequently to make the spread of the disease from unsuspected foci less likely. The bacteriological diagnosis is also important in this respect since it may be made before the Widal test is positive. The diagnosis of typhoid fever is often missed. In a recent case in a physician's own family Dr. Musser found two unsuspected cases. Three others of the family came down with the disease as a result of the lack of precautions during the non-suspect period. The disinfection of urine is now the most important element of prophylaxis and for this the use of urotropin, which not only does no harm but prevents cystitis so common in typhoid, or cures it if it has already begun.

Milk and Typhoid.—Dr. DeLancey Rochester, of Buffalo, said that after water milk is the most frequent source of typhoid. Not long since an epidemic of the disease in Buffalo was traced to the selling middleman who handled the milk during the time when typhoid fever was in his family.

Dr. Kraus, of Memphis, reported a case in which the typhoid infection had come from ice cream contaminated in the handling. When Dr. Kraus was in the office of the health bureau at Memphis, some years ago, the records showed 270 deaths from tuberculosis, 230 from malaria and 40 from typhoid fever. Undoubtedly in many of these reported deaths from malaraia the real cause was typhoid fever.

Sanitary Experts versus Engineers.—Dr. Frank Warner, of Indianapolis, said that until our American cities took more care with their water supplies the ty-

phoid mortality in this country will be high. Cleveland is now in the midst of an epidemic of the disease, Twelve hundred cases have been reported and the health authorities suspect that at least 3,000 cases have occurred. The new intake for city water from the lake is some two miles above the town and is promised to be pure but only engineers and not bacteriologists or medical sanitarians have been consulted with regard to it. This is the mistake that has been and is being constantly made in many parts of the country. The engineer is capable of solving the problems of water transportation but not of providing a healthy supply or of realizing the conditions on which that will depend. This short-sighted policy that has made the mistake of the Chicago drainage canal possible must be corrected if good water supplies are to be furnished.

Intermediate Type of Fever.—Dr. Roberts, of Nashville, Tenn., said that there is undoubtedly a third continued fever, besides typhoid and malaria. In a number of recent cases while no plasmodium could be found no Widal test was present.

Dr. C. L. Abott said that besides drinking water there were other causes of typhoid fever that must be guarded against. Flies and mosquitoes are prominent in this respect, yet very few precautions are taken.

Dr. Jas. Tyson, of Philadelphia, said that the more experience the clinician had the less liable was he to think of another type of continued fever besides malaria and typhoid fever. The danger of typhoid fever being contracted from water can practically all be obviated by boiling the water. This simple precaution is not sufficiently insisted on with the result that many needless cases of typhoid develop and consequent danger for others.

Civic Responsibility and Neglect.—Dr. Jas. J. Walsh, of New York, said that the recent expression of a sanitarian when a death from typhoid fever takes place some one should be hung should be kept before the minds of municipal authorities. It is now known how to prevent typhoid fever. When, therefore, it occurs some one is criminally responsible. It is no mere unfortunate accident about which nothing further is to be said. Polititians who prevent the furnishing of pure water must be taught that the civic sense of the community will not permit such playing with human life. Methods of filtration that are effective are now well known and there is no good excuse for typhoid fever from impure municipal water.

Dr. Walter Shropshire, of Yoakum, Tex., said that the boiling of water only gives a false sense of security. Typhoid fever may be conveyed by flies, by uncooked vegetables, by personal contact. Real prophylaxis must begin further back by a provision of good water, for the ignorant, careless classes cannot be educated up to regular habits in the boiling of water, and thus become sources of contagion for others.

Dr. T. J. Happel, of Trenton, Tenn., in closing the discussion, said that he was convinced that there was an immediate type of fever between typhoid and malaria. This is a simple continued fever not due to the bacillus of Eberth, nor the plasmodium. It is begging the question to say that these cases are paratyphoid fever, for that concedes they are not typhoid.

Dr. John S. Fulton, of Baltimore, said that the trained nurse is a better barrier to the spread of typhoid than the physician because her constant presence enables her to see that proper precautions are observed. For the disinfection of typhoid stools the best thing is chloride of lime or fresh unslaked lime. This is unpleasant but may be kept out of the house in a basket and is cheap, yet if used plentifully, gives satisfactory results.

The Chairman, Dr. Thayer, said that when the United States Commission from the Marine Hospital Service were investigating the question of the transmission of yellow fever, the whole commission offered themselves for experiment in this matter. During the course of their investigation, Dr. Lazear took the disease and Dr. Carroll, who had been inoculated, also acquired the disease. Lazear unfortunately died from the disease. Dr. Carroll, however, is able to present the results of the investigation and stands as one of the men most deeply concerned in one of the most humanitarian discoveries of all times.

Transmission of Yellow Fever.—Dr. James Carroll, U. S. A., said that in the summer of 1897 some investigations were carried on with the idea of determining the cause and method of transmitting yellow fever. Sanarelli's bacillus was at that time the accepted cause of the disease. In eleven autopsies made with great care and especially with every bacteriological precaution, the army commission failed to find Sanarelli's *Bacillus icteroides*. There were two lines of investigation then open. The first was to accept the mosquito transmission theory which had been insisted on for many years by Finlay and to continue the study of the bacteriology of the intestinal tract. Needless to say, after all the investigations that have been made of intestinal bacteria in tropical countries with the idea of finding the yellow fever bacillus, this did not seem a very favorable method.

Traditions of Mosquito Theories.—The connection of the mosquito with yellow fever was urged by some of the old physicians. Rush, in 1797, suggested it and in the two decades between 1840 and 1860 a number of medical men advanced it once more. In 1853 Bärenhaut, of Biloxi, Miss., said that during the yellow fever epidemic of that year, mosquitoes and fleas were very abundant. In 1839, Sir William Ferguson stated that yellow fever was conveyed from place to place in South Africa and that there were always three to four weeks between the landing of yellow fever patients and breaking out of the epidemic in the land. Carter also noted this period of extrinsic incubation.

Finlay's Work.—In 1881 Dr. Finlay, of Havana, advanced the theory that the yellow fever was transmitted by mosquitoes and reported five mild cases of the disease which had been thus communicated. His report was made to the Royal Academy of Madrid. His idea was that the mosquito took some of the infectious material from a patient suffering with yellow fever and then transferred it mechanically to the next person bitten. He thought that the hibernation of yellow fever might be accomplished in the sheath of the proboscis of the mosquito. This is quite different to the theory of the Army Commission, which assumed the existence of the parasite of yellow fever in two stages, one in the vertebrate and the other in an invertebrate host. Hence the necessity for the extrinsic incubation period noticed by Sir William Ferguson. The shortest interval noticed between the bite of a mosquito and the communication of yellow fever is twelve days. The longest thus far noted is 57 days. Dr. Finlay assumed that his cases of yellow fever developed three days after the mosquito bite. The attack was usually very mild though sometimes a degree of protection was acquired by the persons bitten without the actual occurrence of yellow fever. The Army Commission did not find this protective influence.

Study of Incubation Period.—The ordinary intrinsic incubation period of yellow fever is from one to seven days. At the time of Finlay's experiment ninety deaths from yellow fever took place in Havana. The experiments were made upon recently imported, non-immune young Spanish soldiers who had just come to Havana. It is easy to see that these experiments have little value. Dr. Finlay caught a specimen of

the mosquito known as *Pungens*, just after it had bitten a yellow fever patient and pressed some of the material including blood just sucked up into a test tube. A *Stegomyia* mosquito was then applied to the material and after feeding was induced to bite a non-immune individual who came down in two days with yellow fever. This is one of his characteristic experiments and one on which he depended for the proof of his theory. From what is now known it is of no value. The experiments performed by the Army Commission were quite different. Lazear submitted to being bitten by infected mosquitoes, but without result. Later, when on attending some yellow fever patients, he saw a mosquito bite him, he allowed it to escape. His sad end is very well known. Unfortunately an American nurse, on whom the experiment was tried, also died. These cases demonstrate, however, beyond a doubt that it is the mosquito that transferred yellow fever, and further experiments have shown that it is only the mosquito that does so. Before the mosquito theory fomites played an important rôle. Now, apart from fumigation, which kills mosquitoes, disinfection is considered to be absolutely useless.

Prophylaxis of Yellow Fever.—Dr. Stanford E. Chaille, of New Orleans, said that he had been a student of yellow fever since 1851. He had shared the dangers and the blight of city life and commerce that the disease caused and he appreciated the efforts of those who had recently done so much. The certainty of the method of transmission of yellow fever is one of the greatest blessings that has ever come to mankind. Yellow fever has been in Havana for 140 years, but since the investigation of the United States Army Commission and the methods put in practice by them no cases have occurred since September, 1901. Formerly filth and fomites were considered the important agents in the transmission of the disease. Now these can be disregarded and if we only prevent mosquitoes from getting at yellow fever patients, there will be a total disappearance of the disease. Parnell and Souchon, among Southern sanitary authorities, still insist on the importance of disinfecting the fomites.

Mosquito Warfare.—It is important that the crusade against mosquitoes should be undertaken seriously by all cities likely to be affected by yellow fever. Havana's successful warfare makes evident that this is the important prophylactic precaution and yet shows at the same time how possible it is to secure absolute protection from the disease. It might easily be thought that the precautions were not difficult, but Guiteras' observation that the *Stegomyia* may live for 150 days after having been infected by application to a yellow fever patient shows the necessity for extreme care. With regard to fomites, the experience in New Orleans that often persons in the same house with yellow fever patients did not acquire the disease is confirmatory of the non-infectiousness of this material. Undoubtedly, however, yellow fever may gain an entrance into the city among the unvisited poor and may spread before proper reports of its existence are made. The blood of yellow fever patients is, however, only infective during the first four days, so that precautions are not so difficult as they might appear. It may yet be found that there are other hosts and it is not impossible that drinking water may become infected from dying mosquitoes, but these are possibilities not yet fully investigated.

Knowledge Not Yet Definitely Fixed.—Dr. Souchon, of the State Board of Health of Louisiana, said that disregard of disinfection may yet prove serious and lead to the outbreak of a severe epidemic of yellow fever. The investigations of Reed and Carroll, of the United States Army Commission, was carried on at Havana at a time when yellow fever was not especially virulent are likely to become more epidemic. The city of Havana had been thoroughly cleansed as never before and sanitary precautions of the greatest stringency were being taken. The mosquito theory as the only method of transmission of yellow fever cannot be accepted absolutely. One-third of the non-immunes who were inoculated by the mosquitoes did not acquire the disease. Fomites transmitted to New York and to Spain may not transmit the disease, but that is because these are unfavorable climates. It is quite another thing to assert that the disease would not be acquired at New Orleans, Galveston or Mobile. The yellow fever germ has not been seen yet, it is not known if it is an animal or a plant parasite; it may be conveyed in many ways. It is important to wait then and be sure before giving up old-time precautions, that have proved successful for new ones as yet only on trial.

In closing the discussion, Dr. Carroll said that the fact that the injection of the blood of yellow fever patients gave yellow fever is no argument against the mosquito theory, since malaria may also be conveyed the same way, yet is surely mosquito-borne. There is no question in the minds of any of the commission who saw the experiments in Havana and who followed every step of the eradication of yellow fever from that city, but that fomites have nothing to do with the case and the mosquito is the only active agent for communicating the disease.

Source of Infection of Plague.—Dr. W. J. Calvert, of St. Louis, said that plague has now been in existence as an epidemic for nearly eight years and there is no doubt that it will continue for some time to be a constant threat for civilization and commerce. It was transferred from Hongkong to the coast towns of China and there seems no doubt that rats were the agents of the transfer. The port of Hongkong is infested with rats to such a degree that they are a positive nuisance. Since then it has followed the track of commerce and each of its appearances has not been difficult to trace to its origin. The recognition of the disease in its earlier stages is extremely important, in order to avoid its spread before precautions are taken. There is usually only a slight reaction at the point of entrance, and this may occur in so small a wound as not to be noticed. Lymphangitis and some swelling of glands commonly follows. The primary bubo among the unshod eastern people are more than 50 per cent. of them in the femoral and inguinal regions, 25 per cent. are axillary, because of the liability of the hand to small wounds. In children the glands in the cervical region enlarge very often because of the habit of putting things into their mouths.

Other Points of Entrance.—While most of the infections occur through wounds and through the mucous membrane of the mouth, other points of entry are well known. Pneumonia is frequent so that the bacilli somehow get into the air and are breathed into the lungs whence they affect the bronchial glands and produce a severe form of the disease. Mesenteric bubos from infections through the intestinal tract are rare, but occur occasionally. Hemorrhage occasionally takes place into the stomach and the vomited material constitutes a source of danger, though the fact that few attendants in hospitals have been affected, shows that the disease is not contagious. Any material in contact with the patient may prove infectious and its infectiveness may last much longer than was formerly supposed. The disease spreads especially in the dark, poorly ventilated houses of the poor.

Origin of Plague.—Plague originated in Egypt and was carried far by merchants. The bacillus is very long-lived and may be transmitted in merchandise even months after contact with the patient. Rats are

probably the most fruitful source of the disease. The affection is raging very virulently in the East and unless concerted action for its regulation is taken repeated epidemics may be anticipated along the track of world's commerce for years to come. The problem is an important one and must be frankly faced, or great loss of life, to say nothing of disturbance of commerce, may result.

Prophylaxis of Plague.—The most important thing is diagnosis. This is not always easy. The first cases are seldom actively bubonic. Such cases are easily diagnosed. The first cases, too, are seen not in hospitals, where every facility of diagnosis is at hand, but in hotels in which physicians and every one concerned are resourceful in attesting the non-infectiousness of the fatal fever. In San Francisco one case of plague was treated as typhoid fever. Another case diagnosed diphtheria was treated with an abundance of serum. This patient became violent and spit in the face of the nurse who developed an acute plague septicemia. Plague pneumonia was considered lobar pneumonia, but the child of the woman suffered with true bubonic plague. Not infrequently, when there are local symptoms, the infection is considered to be erysipelas. One case diagnosed as acute appendicitis requiring immediate operation, was found to be infection of the retroperitoneal gland and the appendix was perfectly healthy. Bacteriological examinations made aboard vessels supposed to have beriberi showed that though macroscopically the disease seemed to be beriberi the pest bacillus was present.

Failure of Chinese Exclusion.—It is clear now that Chinese exclusion does not exclude. Some arrangements are made for interchange by law and Chinese enter through irregular channels. It is impossible that cases should always be diagnosed by visiting physicians and since our intercourse with China makes the danger of the entrance of plague constant suspicious cases should always be removed to hospitals where they can be examined thoroughly and at leisure. Whenever a case occurs, the premises should be disinfected, unless it is proved that the disease was contracted elsewhere. Gaseous disinfection and the abundant use of chemicals are more or less effective, but fire should be freely employed for all suspected infected articles. All rats and mice found dead should be examined bacteriologically in order to determine the cause of their death.

Possibility of Prevention.—The disease is carried by maritime commerce. At Hongkong, since the placing of sanitary officers and the proper inspection and disinfection of sailor's quarters, no cases of plague have been reported on American vessels. Canada requires only inspection and at least one case has been discovered on Canadian vessels. This shows the danger that exists. As a rule deaths occur among the rats of a port three to four months before the disease is discovered on land. This was true at Hongkong and, fortunately, vessels load out in the stream and so are somewhat preserved by infection by rats. Rats flourish at San Francisco as is well known and have undoubtedly been a mode of spreading infection. Plague among human beings may be stamped out rather easily if the authorities recognize the disease and take the precautions that modern sanitation suggests. Flies and rats, etc., may become infected, however, and thus keep the disease alive for a long time. Killers of rats in eastern ports die in large numbers, as is well known, from plague. At Alexandria the last rat found dead from plague was eighteen months after the last human case had been discovered.

Disingenuousness of Authorities.—It is always true that plague is possible everywhere to the minds of port authorities, except just where it occurs. At Bombay, even after many hundreds of deaths had occurred, it was considered impossible. This was true at Oporto, Alexandria and San Francisco. Glasgow and Sydney gave an opposite example. They admitted at once, warned the world and took measures to stamp out the disease and keep it from being carried from their cities to other places. If the same energy were manifested for the suppression of the plague as for its concealment and for the hampering of sanitary authorities it would long ago have been less dangerous for the commercial nations. This was true, to our sorrow be it said, in this country also, until the spread of the disease from one of our cities to other ports showed the impossibility of denial.

Animal Not Human Disease.—The discussion on plague was opened by Dr. F. G. Novy, of Ann Arbor, Mich., who said that plague is an animal and not a human disease, affecting rats by preference but easily conveyed to human beings. Its bacillus was discovered by Yersin not Kitasato. The flea is responsible for its spread and it is possible that other insects also enjoy this bad distinction. The organism, though it has caused so often in the world's history such widespread epidemics, is a mere weakling. It is very easily destroyed. There are two vaccines against the disease, Yersin's and the Haffkine serum. Haffkine's is prepared by heating the cultures of the organism until they are destroyed, when the injection of the material produces a certain immunity to the disease that does not, however, last very long.

Curative Serum.—Yersin's serum is curative as well as immunizing. It is prepared by injecting bacilli of the most virulent type of the living germ into the horse. This gives a form of antitoxin that is very strongly protective. This has been proved also to be valuable as a curative agent. Dr. Novy had one experience with the use of this serum as a therapeutic agent. A student working in the laboratory at Ann Arbor acquired plague of the pneumonic type. The serum did excellent work in this case though it had to be employed very freely and it is evident that if Yersin's serum is to be curative it must be employed in large quantities.

Situation in San Francisco.—Dr. Rixford, of San Francisco, said that it must be acknowledged that plague existed at San Francisco and San Franciscans are not proud of the position taken by the sanitary authorities, the mass of the medical profession in the State Medical Society admitted its presence. The sanitary authorities were trusted in the matter, however, and the medical profession was deceived.

Arthritis Deformans.—Dr. Thomas McCrae, of Baltimore, said that the present knowledge of rheumatic and rheumatoid conditions was in a chaotic state. There are two types of rheumatic arthritis with bony changes: The first is an osteo-arthritis, the second is a polyarticular affection, the bones being affected secondarily. There are three clinical types of the disease that are often seen: These are (1) Heberden's nodes affecting the terminal joints of the fingers and spreading thence to other joints; (2) polyarticular low grade inflammations with proliferative changes in the bones and (3) mono-arthritic conditions which are doubtful. A form that does not exactly come under any of these and yet is much commoner than was formerly thought is spondylitis deformans, that is arthritis deformans affecting the vertebral joints.

Arthritis Deformans at Johns Hopkins.—In the last thirteen years there have been 110 cases of arthritis deformans under observation at Johns Hopkins. Of these 55 have been males and 55 females, an exact division that occurs in no other set of statistics. There were 106 whites and four colored patients. This is 26 to one, while the ordinary proportion of whites to blacks,

is seven to one in the hospital. This is very different to acute rheumatism in which the proportion is only four to one showing that the blacks have a special tendency to suffer from acute rheumatism. It is often said that the sufferers from arthritis deformans are foreign born, 96 of these cases were natives.

Heberden's Nodes.—Cases having Heberden's nodes were not counted among this series of our arthritis deformans unless there were other symptoms. In nine cases that began with Heberden's nodes other joints have become involved, though only two of the cases were severe. This confirms some of Charcot's idea that Heberden's nodes protected from the severer forms of arthritis deformans. In no case was there any spondylitis in cases beginning with Heberden's nodes. There were two cases of Still's disease. There were 90 cases of polyarthritis. One-third of these patients were below twenty years of age. In nearly one-half of the cases there was an acute onset and there were acute recurring attacks from one to ten in number. Intercurrent affections were prone to bring back the attacks. In ten the cause of the recurrence seemed to be injury, in six severe wetting, in five dysentery.

Distinctive Spread of the Disease.—In many cases of true arthritis deformans the joints of the cervical vertebræ become involved. This is true of at least one-third of the cases. In one-fourth of the cases the temporomaxillary joint becomes affected. In 80 cases the knees were involved showing that the disease is prone to attack this joint. The temperature as a rule was low —99° to 100° F. The pulse was higher than would be demanded by the ordinary pulse temperature ratio; in less than ten per cent. of the cases was there a normal pulse. The affection may be differentiated from acute rheumatism then by the lower temperature and a tendency to the involvement of the joints of the neck and the jaw.

Pathology of Arthritis Deformans.—The description of the pathological changes given in the text-books show only the late changes and are therefore not of much value for the practitioners seeing early cases. The disease seldom kills and early stages of the disease do not come to autopsy. In a few cases examined inflammatory changes were the characteristic incidents of the arthritic trouble.

Simulate Acute Rheumatism.—The diagnosis of acute arthritis deformans usually made is nearly always acute rheumatism. This means at once the administration of large doses of salicylates over long periods; as a consequence, too, meat is cut off and the patients are put on a low diet. No worse régime could be instituted for such cases. The salicylates are depressing and disturb the composition of the blood. Nutrition is the most important and patients must be encouraged to eat plentifully and meat must be a staple article in their diet. The affection seldom leaves without some trace, and it takes weeks before the joint clears up, while rheumatism leaves a normal joint. The heart practically escapes in arthritis deformans before the diagnosis acute rheumatism is made, then it is the physician's duty to exclude arthritis deformans.

Spondylitis Deformans.—Spondylitis deformans, supposed to be rare, is really not at all infrequent. There were 22 cases under observation, 20 of them being males. Localized spondylitis is often overlooked. The characteristic sign of it is the deposit of bone in the vetebræ which gives a distinctly rough feeling. Often there is complaint of pain and stiffness in the back and the affection is sometimes called lumbago. Owing to the stiff position which the patient must maintain, pains and tired feelings in the legs are apt to develop and the affection is often called sciatica. In all suspicious cases the spine should be examined. The patient should be stripped and bend forward and backward and then to either side while the hips are held firmly. Distinct limitation of motion will be noticed. In young people there is danger of mistaken diagnosis, for tuberculous caries of the spine. In all the cases at Johns Hopkins the tuberculin test was employed and was negative.

No Uric Acid Diathesis.—Dr. James J. Walsh, of New York, said that undoubtedly most of the cases of supposed subacute or frequently recurring acute rheumatism leaving changes in the joints and running over into chronic rheumatism, were really cases of arthritis deformans. This affection is much more common than has been thought, and in young women particularly, rheumatic attacks which are not affected by the salicylates or which cause any involvement of the jaw or neck-joints should be suspected of not being acute articular rheumatism, but of being arthritis deformans. So far it has been the custom to attribute many joint changes to a supposed uric acid diathesis. There is absolutely no ground for so thinking. The word rheumatism has been abused to an enormous extent and so long as practitioners are satisfied with this for diagnosis, rational therapeutics of these cases is impossible.

Arthritis Deformans in the Dissecting Room.—Dr. Moore, of Galveston, Texas, said that a large number of cases of chronic changes in joints occur in the dissecting room. It is evident that most of these cases are not due to chronic rheumatism, though they are often so diagnosed, but rather to arthritis deformans. Dr. Moore has had these cases in which pains in the back and legs were due to changes in the vertebræ.

Dr. C. E. Skinner, of New Haven, said that there are a number of important affections masquerading under the name rheumatism. Certainly many nervous affections and many forms of neuritis are grouped under this accommodating name. It is often impossible to differentiate them at the beginning and later changes in joints from atrophy or disuse may complicate the problem.

In closing the discussion, Dr. McCrea said that early diagnosis of cases of arthritis deformans furnished the possibility of preventing the recurrence of the disease and the later serious changes in joints, if patients can only be kept from exposure and their general health preserved. Nutrition is the most important thing in treatment. There must be no cutting off of meats, and while massage and baths are of doubtful utility as soon as the acute symptoms subside in rheumatic arthritis, the patient must be got out of bed and made to move around. Movement will do more good than anything else to prevent changes in joints.

FOURTH DAY—MAY 8TH.

Passing of Chronic Rheumatism.—Dr. James J. Walsh, of New York, said that rheumatism is one of the therapeutic opprobria of present day medicine. It is the great field of success for the quack. One of the reasons for failure in treatment is undoubtedly carelessness in diagnosis. In many so-called rheumatic conditions are really pathological conditions quite different from rheumatism. Dr. Walsh enumerated flatfoot and weak foot, old dislocations of joints, relaxations around joints and various unfavorable conditions for muscular action, as causing so-called rheumatic pains because they are often worse on rainy days. For instance in scoliosis the side of the body on which the scapula is most prominent is almost sure to be more painful and fatigued if there is much exertion. Practically all of the occupations in which there is some habitual motion cause painful conditions that may easily be called rheumatic and treated as such, but of course without success.

Rheumatoid Arthritis.—There are three forms of rheumatoid arthritis, the polyarthritis, the mono-arthritis deformans, the best example of which is senile coxitis, or the analogous affection spondylitis deformans and, finally, Heberden's nodes, with the slow running form of polyarthritis deformans. These affections are much more common than has been thought and are often mistaken for obstinate or anomalous cases of acute or subacute rheumatic arthritis or for chronic rheumatism. In young women especially chronic arthritis, rheumatoid arthritis may give a picture that resembles very closely, especially at the beginning, acute rheumatic arthritis. The salicylates fail to relieve, however, and the disease is not self-limited, as rheumatism is, nor do the lesions in the joints clear up in the satisfactory way characteristic or true acute rheumatism.

Frequency of Gout.—Gout is supposed to be infrequent in this country, but as matter of fact Osler's statistics from Johns Hopkins show that three cases of gout come under treatment in Baltimore for every four cases admitted to St. Bartholomew's Hospital in London. Most physicians would have said at once that gout was at least three or four times as frequent in England as in this country, while as a matter of fact it is only one-fourth more frequent. After the cases of relaxed joints occupation neuroses, neuritis causing disability, pain, achy feelings, and as the result of trophic influences, changes within the joints, and if the cases of gout and rheumatism are taken out of the list of chronic rheumatism very little will be found to be left for this supposedly very frequent disease. As a matter of fact chronic rheumatism is a medical curiosity.

Uric Acid Diathesis Overdone.—Dr. James Tyson, of Philadelphia, said that there is undoubtedly more gout in this country than has been thought and gout and chronic rheumatism require very careful differentiation. Too many aches and pains are attributed to the uric acid diathesis and it is doubtful as yet just what the condition is or what is its significance. The presence of the increase of uric acid in the urine occurs ocasionally as the result of overeating and drinking, but is very rarely a permanent condition and entirely too much has been attributed to it.

Dr. McCrae, of Baltimore, said that most obscure painful conditions are called chronic rheumatism. The profession is largely to blame in this matter, though medical men have inherited the idea and now pass it on. With regard to arthritis deformans and chronic rheumatism and the relation of these diseases to gout, medical opinions even in England, where these diseases have been most studied, are absolutely chaotic. One hundred and ten years ago Heberden's nodes were described and if the old English physician in whose person they were first recognized still has an interest in medicine he must be extremely interested to find how little more is known than in his own day.

Helter Skelter Diagnosis of Rheumatism.—Dr. Alexander Lambert, of New York, said that at present there is entirely too much helter skelter diagnosis of rheumatism and the profession must get a more respectable and more self respecting attitude towards these painful affections. For a long time Dr. Lambert has been of the opinion that so-called cases of chronic rheumatism in which ulnar deformity occurs, are not due to rheumatism. Acute rheumatism is undoubtedly sometimes diagnosed, especially in young women when the cases are really arthritis deformans. Gout has increased greatly in New York. There are cases of chronic rheumatism, however, developing as the result of long-continued subacute rheumatism, or a series of attacks of subacute rheumatism. As for the uric acid diathesis more uric acid will be found in the urine of a strong, healthy young man doing athletic work than in any other class of persons. These persons will surely not be pronounced gouty, or still less rheumatic.

Dr. Walsh, in closing the discussion, said that his title the passing of chronic rheumatism does not imply that there are no cases of the disease but that it is losing its marked prominence as a widespread frequent affection. It is a rare and not a frequent disease. If medical men generally could be gotten to realize that chronic rheumatism is a medical curiosity careful studies of which would be accepted readily for publication and would make very welcome contributions to medical literature then the quacks and especially the osteopaths would have fewer opportunities to make cures after the regular practitioner has failed because of mistaken diagnosis.

Albuminuria and Diabetes.—Dr. Arthur R. Elliott, of Chicago, pointed out that albuminuria is quite frequent in diabetes and especially in the terminal stages. The cause of it evidently is the irritation of the kidneys produced by the passing of large amounts of sugary urine. Albuminuria is usually associated with the acid toxemia that develops commonly in diabetes, and this shows that there is a real kidney affection and probably a uremic element in the coma of diabetes. It is important then that the treatment of diabetes should be so conducted as to prevent so much sugar being passed as will irritate the kidneys, since this hastens the fatal termination.

Hemoglobinuric Fever.—Dr. Walter Shropshire, of Yoakum, Texas, pointed out that hemoglobinuria occurs always in malarial countries, but only in those in which the severest forms of malaria exist. Poisonous doses of quinine do not produce hemoglobinuria. This condition then is not due to the quinine, but to the malaria, but rather to the faulty administration of quinine. Dr. Shropshire has had but one patient suffering from the disease die, though treated with quinine hypodermically, and in that case the death took place after forty-eight hours and before the quinine had had its proper effect. Hemoglobinuria is an idiosyncrasy and is prone to run in families. Plenty of quinine should be administered because the parasite in these cases is very resistive. The average dose to begin with should be about 40 grains, then 20 grains should be given for three or four days.

Dr. Kraus, of Memphis, in discussing hemoglobinuria, said that he has treated 21 cases without a death. He does not believe in cinchonizing patients. Dr. Barrier, of Louisiana, said that quinine should not be administered in these cases, for the more is given the worse the patient becomes. It is like the old-time bleeding and may easily be carried to excess.

Should the Tuberculous Know the Truth?—Dr. Ambler says tuberculous patients should be frankly told that they had tuberculosis. The patient's serious cooperation is required for his recovery, and for this he must fully appreciate the nature of the affection from which he is suffering. This is the basis of the only rational method of therapeutics for the disease. For the moment patients will be discouraged, but they will brace up after a time and will eventually thank the physician for his candor.

Tuberculous Peritonitis.—Dr. Joseph Eichberg, of Cincinnati, said that tuberculous peritonitis runs a very insidious course, and that it is not always easy to recognize. There is single constant symptom. Ascites occurs very prominently, and some tenderness, with tendencies to constipation, but any or all of these may be lacking. For long laparotomy was considered to be curative of the disease. Now it is known that the cases which recover after laparotomy recover quite as well without any operation.

Tuberculosis in the Negro.—Dr. Seale Harris, of

Union Springs, Ala., said that tuberculosis was unknown among the native Africans, but is very common among the negroes. It was a rare disease among the slaves in the old times, but has become very common of late years. The negroes have small lungs, less lung capacity, and less chest expansion than the whites. Besides bad hygienic surroundings and the prevalence of syphilis among the negroes makes the disease more and more common. Lack of nourishment is a very important factor in this matter. The negroes have become an important source of infection, and there should be state sanatoria for tuberculous negroes, so that they may not become a source of infection to others.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Held at Washington, D. C., May 12 to 14, 1903.

AMERICAN SURGICAL ASSOCIATION.

(Continued from Page 959.)

THIRD DAY—MAY 14TH.

Congenital Malposition of Cecum and Colon, with Enclosure of Ileum and Cecum in Membranous Sac.—Dr. Leonard Freeman, of Denver, said that this patient was so very sick at the time of operation it did not seem possible for any intervention to be successful; nevertheless he opened the upper abdomen and found an enormously distended tumor, which at first was very difficult of identification. On close inspection, however, it showed itself to be a great sac containing the above mentioned viscera. Although Mr. Moynihan does not agree with the general statement that these herniæ often occur into Treit's fossa, there is reason to believe that they occasionally occur more often than his statistics seem to show. The contents of the sac in the case that he operated upon were gangrenous. The mesentery of the colon, which was unusually long, had become twisted, allowing its entrance into the sac and tortion had cut off the blood supply entirely. On opening the sac, it was found to be full of extravasated blood and decomposed material.

Dr. J. C. Bloodgood, of Baltimore, in discussing this paper, said that he once had a case in which a similar condition occurred as a sequel to a very simple operation of inguinal hernia. The patient vomited rather continuously after the anesthetic, but before very long he saw that he had a more complicated condition than the nausea of anesthesia to deal with. In thirty-six hours the hepatic dulness was obliterated and the leucocyte count was 16,000. The case was operated upon largely because of this finding, and a very complicated retroperitoneal hernia was discovered and liberated in time to save the

Dr. Ellsworth Eliot, of New York, had never seen such a case, and he asked if there were large blood vessels at the neck of the sac and whether Dr. Freeman had divided the neck.

Dr. Freeman, in closing, said that the interior mesenteric vessels were present in a very much dilated form, so much so that he was not able to divide or even dilate the neck of the sac.

Sympathectomy for Exophthalmic Goiter.—Dr. B. Farquhar Curtis, of New York, said that the number of cases of this condition which he had treated surgically was eleven. Of these, three had died of acute thyroidism. In sympathectomy the exophthalmos usually improves at once, the remaining symptoms persisting often for months. The chief line of thought in his paper lay in his remarks as to the etiology and means of avoiding acute thyroidism. The symptomatology of the condition was, he said, very simple and direct, and could not possibly be mistaken for anything else. The pulse went up to 160 to 180, and the temperature rose to 103° to 106° F. These symptoms were accompanied by the other evidences of high temperature, and death occurred suddenly or from acute edema in from twenty-four to forty-eight hours. Obviously sepsis can have nothing whatsoever to do with the causation of this interesting but exceedingly fatal complication, because in the first place all his wounds healed aseptically and furthermore the patients were dead before enough time had passed for bacterial invasion. Occasionally the patient recovered from acute thyroidism and probably one of the best indications lay in the temperature. He had noticed that the outlook was very bad if it rose above 103.5° F. The three theories which have been advanced to explain this condition were as follows: (1) the nervous origin; (2) the absorption theory, by which the excessive or pathological secretions of the thyroid were taken into the system, and (3) the absorption of the hematoma which so frequently forms at the site of operation. He believed the first supposition as to the origin of the condition to be the correct one. How did it happen that Kocher, who had reported fifty odd cases with but four deaths, should have had such a low mortality? It was instructive to note that of these fifty cases only six had been given general anesthesia and that all the deaths occurred in this series. It was evident then that he had had no mortality whatsoever in those cases of thyroidectomy in which he had operated by local anesthesia. The conclusions which we seem able to reach at the present moment are that exophthalmic goiter is curable in about 60 per cent. of all cases and that Jonnesco's operation of sympathectomy, if done on one side at a time and under local anesthesia, probably gives the better results.

Dr. T. W. Huntington, of San Francisco, said that if any action was to be taken in a given case of exophthalmic goiter, whatever was going to be done should be attended to before the patient became prostrated with the disease. He had operated on six cases only; on these he had done hemisection of the gland. He believes that the two most important points are, first, that it must always be done under local anesthesia, and second, that thyroidectomy is to be preferred to Jonnesco's operation. All his cases had been successful.

Dr. Willy Meyer, of New York, said that in discussing the two well-known methods of treatment, we should not forget that there was a third, viz., serotherapy, by which the patient is fed with goat milk, from which animals the thyroids were extirpated. Six patients were reported as cured by this treatment, and it certainly is significant that Merck has considered it of sufficient importance to prepare a serum which has similar results to the milk from these goats. The treatment is still *sub judice*. But enough has been done to bring the subject into prominence, and when it is remembered that the carnivora die, that herbivora undergo cachexial degeneration and that omnivora suffer in proportion to the amount of glandular tissue removed, it is not beyond the power of belief that there may be much more in this treatment than conservative people are prone to think.

Dr. Bacon, of New Haven, said that pathologically there are two types of exophthalmic goiter. They are characterized etiologically as being due to a hyperthyroidization, or to nervous changes. Fortunately for future operative intervention there are very

positive criteria by which we can separate the types. Exophthalmic goiter arising from the first-named condition may be further classified as due to excessive or to perverted secretion. The criteria for simple excess are, first and most important, the exactness of the parallelism between the symptoms presented by the disease and those following the administration of thyroid extract; second, a presence of actual local change in the thyroid, which is manifested by the enlargement both of the vessels and of the gland. Perverted secretion on the other hand is characterized by the irregularity of the appearance of the three classic groups of symptoms. One always predominates over the other two. While we cannot look for as definite differential points in cases of exophthalmic goiter arising from nervous conditions, still it has been observed that the symptoms here are very apt to be unilateral.

Dr. Ochsner, of Chicago, said that seven or eight years ago he lost a patient from acute thyroidism. He then made up his mind that the condition was due to the fact that the gland had been rather roughly handled during the operation and that its internal secretion, whether perverted or normal, had been forced into the system in excessive quantities. Since then he has done the operation of thyroidectomy five times, and he thoroughly believes not alone that this is the preferable operation for the great majority of these conditions, but that thyroidism can be positively avoided by handling the gland very gently. He has found that the result from extirpation has been very prompt, the pulse having in one case dropped from 160 to 80 within a few hours after operating. He always uses a small drain.

Dr. Geo. Woolsey, of New York, reported a case which had died undoubtedly, he thought, from the employment of general anesthesia. Primary and secondary exophthalmic goiter should be distinctly separated. In the latter the outlook is excellent.

Dr. F. J. Shepherd, of Montreal, reported six cases with one death from thyroidism. Three are not absolutely well. He considers the question bearing on the primary or secondary characteristics of the condition as of the utmost importance.

Dr. J. C. Bloodgood, of Baltimore, said that so far as differentiation of these conditions went, unfortunately so far they had not been able to find any gross or microscopical difference between primary and secondary exophthalmic goiter. The difference, however, which exists between this form of enlargement of the thyroid and the normal gland is about the same as that which one sees between the lactating breast and the normal organ. He believes that for all cases, therefore, the operation of choice is the hemisection of the thyroid, sympathectomy being reserved for the relief of residual symptoms, if such exist.

Dr. Curtis, in closing, said that he has always been most careful not to handle the gland roughly, even though he has become convinced that the condition of thyroidism is a nervous one and not due to absorption from handling. Probably the benefit accruing from gentle handling lies more in reducing the nervous shock inflicted, rather than in limiting the amount of secretion squeezed into the circulation. Sympathectomy is in the distorted necks of these patients a difficult and often a bloody operation. He believes that the employment of local anesthesia will be, if ever successful, limited to chosen cases.

Prostatectomy and Galvanocaustic Prostotomy (Bottini's Operation).—Dr. Willy Meyer, of New York, said that one of these forms of direct attack upon the prostate is now considered preferable to the indirect methods advised by White and others. Of the two there is no doubt that the most surgical and the ideal is the removal of the gland. There is, however, a class of patients in whom this condition is certainly contraindicated. They are old men who have not long to live, whose environment is such as to contraindicate their taking the greater risk of the radical operation. Without showing any discrimination, he took every case of enlarged prostate which presented itself at his clinic and performed 59 cases with the cautery. Of these 52 recovered. A very small mortality indeed when one considers the conditions under which the cases were operated upon. Three died from sepsis, two from spinal anesthesia and two from other causes; thirteen recovered absolute power over their bladders. In thirteen the recovery was not quite so perfect, but sufficiently good for practical purposes. Only one of the series was not improved at all. Seventy-five per cent. of these patients were able to stop catheter life entirely. He concluded that in our present light there are two useful operations for the treatment for hypertrophied prostate, that they were both direct, the indirect methods having practically passed out of consideration. The extirpation of the gland is undoubtedly the operation of choice, and it should be done through the perineal route, because this best preserves the integrity of the seminal vesicles. Very debilitated patients should have a Bottini done, but in the near future it is to be hoped that the operation of prostatectomy will have been so thoroughly worked out that the gland will be removed before the patient is prostrated from infection.

Dr. Leonard Freeman, of Denver, said that he had performed twenty Bottini operations and had got very good results with it. He agreed with the speaker, however, that it was not the operation of choice. He now reserves it, first, for those cases where a general anesthetic cannot be given, and, second, where the disease is incipient.

Dr. Meyer, in closing, said that the object of his paper had been to call attention to the fact that both these operations had individual fields, and that no one should pretend to operate upon the prostate without being efficient in the technic of each.

Gonorrheal Septicemia.—Dr. Chas. A. Powers, of Denver, said that gonococci had been found in a pure or mixed culture in practically all the tissues of the body. It was really a grave mistake for the profession longer to tolerate the continued use of the expression "rheumatism" as a designation of this form of infection. He cited a profoundly interesting case in which he had been obliged to make a large number of incisions down through the periosteum. From all but one of these had flowed a thin serosanguinous discharge. On examining the cultures taken from each wound, it was found that the gonococcus occurred in pure culture in all save where the exudate had been purulent. Here there was a mixed infection with the steptococcus. Young thinks that the gonococcus in pure culture can produce pus, and this of course may very likely be so since one case alone is of very small weight. An important characteristic in the history of this patient was that for months the wounds obstinately refused to heal, but finally at the expiration of about a year, union was complete and the function of the joints was tolerably good, although a certain amount of disability will remain.

Myositis Ossificans Traumatica.—Dr. J. F. Binnie, of Kansas City, gave the theories which bear upon the origin of this very rare condition. The most

probable seems to him to be the belief that with the advent of the trauma the muscle in violent contraction tears off a greater or less number of bone cells from its periosteal insertion, and as the torn fragment contracts, it drags these bone cells along with it and distributes them along its path. These subsequently continue their bone forming function and the long spicule of bone often seen in these patients results. Another theory seems much less probable. It depends upon the supposition that there may be embryonic remains, as was suggested by Cohnheim. Very little can be gleaned as to the origin of these tumors from a study of the method of ossification, because it is well known that almost always the two well-known methods work together in the formation of the new bone. Clinically these growths cannot be separated from ordinary exosteomata whether they be attached or free.

Dr. S. H. Weeks, of Portland, Maine, remembered a case in which the bone tumor developed in the great pectoral muscle after an open fracture of the humerus.

Methods of Instruction in Surgical Pathology, Lantern Slide Illustration.—Dr. Joseph C. Bloodgood, of Baltimore, presented very briefly the concise and excellent method which he uses at the Johns Hopkins school. By this method not alone are all the characteristic phenomena of rare cases preserved for years, but they are presented seriatim to the student, so that he is able to follow the case clinically as well as pathologically from the moment it enters the hospital until its discharge or its death. He showed a set of photographs of gross and minor specimens which were taken at random from the series in actual use by the students.

Dr. W. W. Keen, of Philadelphia, said that this method of teaching appealed to him so keenly that he wished it might be possible to find a publisher for Dr. Bloodgood's exquisite monographs, so that in schools less fortunately situated than the Hopkins the admirable technic might do its good work.

Intestinal Localization.—Dr. Geo. H. Monks, of Boston, said that he had endeavored to determine not alone the position, but the direction of the small gut in 24 cadavers. The technic had been to make a very small incision through the abdominal wall, to pull out a knuckle of gut, to apply to it the deductions from his observations, to tie a tag stating what position it was supposed to occupy, and to return it to the abdomen; 180 of these tags were placed and the average error was found to be only two feet. Considering that the length of the gut may vary from 14 to 30 feet, this error was seen to be pleasingly small. In working out his scheme he had been very much helped by threading the gut upon a stick, much as one would a worm upon a hook. Holding it up until the mesentery was taut showed the peritoneal cavity to be very clearly divided into two cavities,—a minor, small, and to the right; a major, large, to the left and communicating with the cavity of the pelvis. This should have a bearing upon the technic of irrigating the abdominal cavity for sepsis. He presented a chart which showed very clearly the differential points which enabled him to locate the position of the gut so accurately.

The Lesions Which Augment the Development of Tetanus and Other Infections.—Dr. L. A. LaGarde, of Washington, presented the microscopical pathology of bullet wounds in the tissue. His conclusions were that inability to infection depended directly on the amount and diffusion of the hemorrhages which take place in the margins of the path made by the projectile. These hemorrhages, indeed, he showed, were much more important in determining pus formation than the number of germs which were sewed. This was demonstrated very beautifully by dusting the surface of the body with powdered charcoal. Naturally this charcoal was distributed in greater abundance along the anterior course of the bullet than in its later regions, but it is well known that pus formation is much more constant at the wound of exit than at the wound of entrance. These hemorrhages then are the positive factors in pus formation, given a very few bacteria. Their distribution and extent depends directly on the size and upon the speed of the bullet.

The Operative Reductions of Old Dislocations of the Elbow.—Dr. Emmet Rixford, of San Francisco, reported a case in which he had had excellent results by a simple incision followed by replacement of the parts. The X-Ray had been most valuable to him in obtaining this result.

Dr. J. B. Murphy, of Chicago, said that arthroplasty or a placing between the severed fragments of bone the aponeurosis of a neighboring muscle was a much better technic than the wet replacement of the Germans. Even suppuration does not interfere seriously with the efficacy of this technic.

The Drowning of Patients in Fecal Vomit as a Complication of Operations During Appendicitis and Obstruction of the Bowels.—Dr. E. W. Andrews, of Chicago, said that this condition, which might broadly be stated to exist as a possible complication of any septic abdominal condition had not yet received the attention which it deserved. It is characterized by the vomiting in overwhelming quantities of the contents of the gut which undoubtedly are allowed to follow gravity by a relaxation of the sphincters of the stomach incident to narcosis. It is a frightfully grave condition, resuscitation being almost impossible. As it never occurs except during general narcosis, it is an indication for spinal or local anesthesia.

Dr. J. M. T. Finney cited three cases, all of which had died from this complication.

The Pathology and Treatment of Tardy Postoperative Intestinal Obstruction with a Report of Cases.—Dr. Ellsworth Eliot, of New York, said that as was well known, the condition might arise from circumferential bands arising from the cicatrix, from an improper position of the gut, or from bands springing from the omentum. Prophylaxis consists in exercising the very greatest care in handling all the viscera, particularly the small intestine. In wounds occurring laterally, it is usually possible to cover suture lines and stitches, which should be as few as possible, by omentum, otherwise by tissue or cargyle membrane. Drains should never be employed unless absolutely indicated, and they should be as small as possible. Other preventive points consist in washing out the alimentary canal from both ends so as to reduce the irritation to a minimum and in changing the patient's position or that of the bed as often as possible. Finally the patients in whom there is a possibility of the development of obstruction should be advised of this danger, so that they may report to the physician before it is too late.

Traumatic Paralysis of the Circumflex, Long Thoracic and Suprascapular Nerves.—Dr. F. E. Bunts, of Cleveland, said that these injuries might be single or multiple, although the circumflex paralysis is by far the most common. This nerve is frequently not injured in its trunk, but in its ultimate terminations in the deltoid muscle. This is an important point in the defence of malpractice suits, which are known

to be so frequent after injuries to the shoulder-joint. The atrophy of the deltoid leads to the belief that the dislocation had not been reduced.

Contributions to the Surgery of Cerebral Tumors.—Dr. Geo. Woolsey, of New York, said that only 2 to 8 per cent. of these cases are now suitable for operation because of our inadequate methods of localization. He called attention to two very important additions, viz., the X-Ray and percussion. He concluded that the prognosis is as good after operating for localizable malignant growths of the head as elsewhere.

The Treatment of Surgical Shock by Adrenalin.—Dr. Edward Martin, of Philadelphia, said it was safe to give at least 100 times as much of this drug as was ordinarily used. The stimulating effects are transient. This is a very valuable point, because if injected intravenously, it is the most powerful cardiac and respiratory stimulant known, and if we can repeat the dose as often as may be necessary, it makes it a therapeutic entity of great importance. He has been able to bring dogs, dead to all appearance for fifteen minutes, back to such lusty life as to have to chloroform them, and he had rescued at least one of a half-dozen hopeless cases in which he had tried it on human beings.

Gunshot Wound of Brain with Seven Fragments of the Bullet. Localization by Sweet's Method Made Operation Inadvisable.—Dr. W. W. Keen and Dr. W. M. Sweet, of Philadelphia, presented this communication. Dr. Keen said that Dr. Sweet had done the work and he had reaped the benefits. He cited a case, which was that of an English lad who had been sent here by the advice of Messrs. Treves and Horsley. He and Dr. Sweet localized the bullet at such a point as to make it almost certain that it had traversed the brain from before backward, inward and upward, and rebounded from the posterior margin of the brain case to occupy a position near the lateral ventricle. From its location and from the fact that the surgeon in removing it would do a great deal of damage to the cortex and because the lad's paresis was improving rapidly, his parents were allowed to take him home without operation, but with the injunction that the bullet should be removed if at any time he had persistent headache or a single epileptic seizure.

Dr. N. P. Dandridge was elected Chairman for 1904. Place of meeting, St. Louis, Mo.

AMERICAN PEDIATRIC SOCIETY.

Fifteenth Annual Meeting, held at Washington, D. C., May 12 to 14, 1903.

FIRST DAY—MAY 12TH.

President's Address.—Dr. J. P. Crozer-Griffith, of Philadelphia, thanked the society for the unexpected honor conferred upon him, and said that he would not take up the time by considering some medical subject, but had chosen to present some facts which would be quite as interesting to the society. He said that while the knowledge of work well done, and the consciousness of having helped so many little patients was in itself gratifying to the physicians, any work that had been done to improve the treatment of the afflicted children was more far-reaching. This society had accomplished much to advance the science of pediatrics. Three hundred and ninety-two articles had been presented to the society since its birth, fifteen years ago, many of these having attracted international attention. The work, individual and collective, on diphtheria, infantile scurvy and disorders of the digestive tract had been of especial value. One thousand five hundred and thirty-five articles had been contributed to medical literature during the past fifteen years by members of the society, thirty text-books had been written and several members had contributed sections to the composite works. Two journals of pediatrics had been established. Dr. Griffith urged the members to overcome the present tendency to become too practical, and not to allow financial interests to interfere with scientific research, both for the maintenance of the reputation of the society and for the advancement of this important branch of medicine.

Synopsis on Some of the Renal Lesions in Infancy.—Dr. C. F. Martin and Dr. F. M. Fry, of Montreal, had prepared this paper, which was based on a study of a hundred cases of nephritis in infants under three years of age. Sixty-five were fed on modified milk and 35 were breast-fed. The maximum specific gravity of urine in these cases was 1.028, the lowest was 1.001, an average being 1.006. In 19 cases ascites was present, in all cases albumin was present in variable quantities, in only ten was albumin present without casts. In 26 cases there was an excess of uric acid.

Nephritis in a Four-year-old Boy Having Only One Kidney.—Dr. A. C. Cotton, of Chicago, presented the case of a child who had been a healthy baby. When three years old he had measles, and six months later developed pneumonia. After this last illness there was some edema of the ankles and around the eyes, and he had frequent scanty high-colored micturitions. Diuretics, hot packs and saline injections per rectum were employed. The child grew worse, with a few periods of apparent improvement, and finally died of uremic intoxication. During the progress of the disease the urine showed a progressive diminution in the urea excreted, and in the amount of total solids. The presence of albumin was constant in variable quantities, granular, hyaline and some waxy casts had been found. On autopsy the plural, pericardial and peritoneal cavities were found to contain clear serous fluid. The right kidney weighed sixty-five grams, the capsule was not adherent, but left irregular, rough patches when removed; the cortex was pale and markings indistinct. The left kidney was replaced by a triangular body about one centimeter in length from apex to base. An artery and vein were traced from this hypoplastic body to the aorta. The right ureter was normal, the left terminated in this rudimentary kidney and contained no demonstrable lumen.

Edebohls' Operation.—In this paper Dr. T. M. Rotch, of Boston, reported a case of a nine-year-old child with a severe nephritis, who never had had scarlatina. Edebohls' renal decapsulation was employed and the child died two weeks later. Dr. Rotch lamented the fact that renal disease was at present so little understood, and that there was as yet no appropriate nomenclature to designate the various pathological conditions. The marked beneficial results that had been attributed to this operation had attracted much attention, but many of these cases may have been functional cases in which recovery would have taken place had no operation been resorted to.

Dr. G. M. Edebohls, of New York, in discussion, said that at present he had nothing additional to add to the statements made in an article printed in the *Record*, March 28, 1903. He said definite results could not be pronounced under four or five years.

Dr. B. K. Rachford, of Cincinnati, said that most cases of nephritis in children were doubtless due to an acute infection of some kind and tended to complete recovery, while in adults the tendency was for the process to become chronic. For this reason the value of the operation should be determined by results ob-

tained in adults. It was impossible to determine the value of operative measures in cases of less than six months' standing, for the ultimate conditions might have been the same or perhaps more favorable without operative interference.

Dr. Rotch said that chronic nephritis did exist in children, and occasionally with fatal results. Nephritis of adults and that of children were two distinct conditions, and each should be studied separately in order that it may be discovered which cases are favorable and which unfavorable for operation.

Dr. C. G. Jennings, of Detroit, reported a case of chronic renal disease in a child in which there was severe persistent pain over the left kidney. The urinary findings led to the diagnosis of chronic interstitial nephritis. Operation was resorted to, but the exposed kidney showed no macroscopic pathological conditions. Renal decapsulation was done, resulting in complete recovery in two months.

Dr. A. C. Cotton, of Chicago, said that chronic nephritis was not so very rare in children, he had seen four cases during the past year.

Clubfoot Operated on by Prof. Lorenz.—Dr. S. S. Adams, of Washington, D. C., showed this case, which had previously been subjected to five tenotomy operations with but little benefit. The deformity was extreme, the child standing on the outer aspect of the little toes. Prof. Lorenz corrected the deformity, relying entirely on hand pressure, devoted twenty minutes to each foot. The feet were encased in plaster casts for three months, the child being able to walk in them with comfort; the casts, which were removed to allow examination of the feet, were to be reapplied for several months longer.

Abscess of the Lung.—In presenting a second case Dr. Adams described the physical signs in the chest of a two-year-old child, which gave evidence of fluid in the left lower chest, and of incomplete consolidations in the left upper chest. The child had an irregular febrile temperature. By means of the aspirating needle about a dram of pus and bloody serum was obtained from the left upper chest, a diagnosis of empyema was made, but no pus was found in the plural sac at operation. On autopsy an abscess was found in the left upper lobe, the pus being due to a streptococcus infection. The right lung was normal, and no other abscesses were found in the body.

Dr. Cotton said, in discussion, that pus was frequently very difficult to find, being walled off by the adhesions of a fissural pleurisy.

(To be continued.)

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from Page 953.)

THIRD DAY—MAY 14TH.

The President, James Stewart, M.D., of Montreal, in the Chair.

Hereditary Ataxia.—Dr. Lewellys F. Barker described the pathological changes found in the brain and spinal cord of two brothers dead of hereditary ataxia. In both attacks began before twenty, the hereditary element coming through the mother, as it does much more frequently. Both patients were intelligent and educated. Their brains were excellently fissured, rather more normal than less. The principal changes found were atrophy of the direct cerebellar tract and of Clark's nucleus on both sides. There was besides an elective degeneration of the dorsal funiculi involving especially the fibers which correspond to the so-called third fetal system of Trepinski. This system develops late in fetal life, being found in fetuses of 42 cm. and more. The interesting feature of the finding is that the lesion which by theory Marie anticipated as the pathological basis of the disease, does not exist. Three neuronic systems below the cerebellum and not the cerebellum itself are affected. The cerebellum is healthy and Purkinje's cells are normal.

In discussing the paper, Dr. Starr, of New York, said that these nndings show the existence of two nervous paths for the muscular sense and give the explanation of the success of Fraenkel's method of treating tabes by training. The voluntary paths are used instead of the involuntary ones, which were the original direction of the impulses.

Unresolved Pneumonia.—Dr. Simon Flexner, of Philadelphia, discussed the autolysis of exudates, especially as they occur in pneumonia. Ordinarily the white cells of the exudate bring with them a ferment which fluidifies and causes an emulsion of the pneumonic exudates and this is then absorbed. In unresolved exudates there is more fibrin than cells and in order to bring about absorption of this a certain amount of vascularization of the exudate takes place. From these newly-formed blood vessels the white cells find their way to bring about the autolysis of the exudate more slowly, but in practically the same way as in the more rapidly resolving exudates. It is probable that the prognosis of a pneumonia as regards resolution may be judged from the comparative amount of fibrin and cells present in the expectoration at the beginning of a pneumonia.

The Adrenal Gland and Antitoxin.—Dr. A. C. Abbott, of Philadelphia, described a series of experiments made in order to determine if the serum of rabbits, that had been rendered immune to the effects of adrenalin by the injection of increasing doses of extract of adrenal glands from guinea pigs, might exercise a destructive process on the same adrenals when still in the living animals. The object also was to determine if repeated injections of the active principle of the adrenals would not produce an immunity of something the same kind as that which is produced by antitoxin. In Dr. Abbott's experiments, while mainly negative, contain a number of suggestive points as regards cytolysis and certain other properties of blood when influenced by specially active principles. His conclusions were stated about as follows: (*a*) It is doubtful if the repeated intraperitoneal injection of rabbits with macerations of fresh guinea pig's adrenals results in the elaboration of a substance in the rabbit's serum that is destructive to the guinea pig's adrenals in situ; (*b*) the most marked effect of the injection of guinea pigs with the serum of rabbits after such treatment is blood destruction. The hemolytic activity of the rabbit's serum for guinea pig's erythrocytes is, as a rule, very much increased; (*c*) in no case were the adrenal glands of the guinea pig demonstrably affected, beyond more or less congestion, by the intraperitoneal injection of the serum of rabbits that had received repeated injections of guinea pig's adrenals; (*d*) the serum of rabbits treated with guinea pig's adrenals was in vitro not only actively hemolytic for guinea pig's erythrocytes, but caused more or less pronounced agglutination of fresh macerations of the adrenal glands; (*e*) the serum of rabbits immune from guinea pig's adrenals differs from that of rabbits immune from guinea pig's blood in being less toxic. The only definite lesions of the adrenals of guinea pigs noted in these studies were produced by the injection of serum from rabbits immune from guinea pig's erythrocytes; and the general character of

these lesions leads to the suspicion that they were associated with suppression of vascular supply due to the development of agglutinative thrombi; (*f*) the remarkable variations in the susceptibility of rabbits to the toxic action of the active principle of the adrenal gland made it impossible to determine the minimum lethal dose of this substance by the method employed, *i.e.*, by intraperitoneal injection of the substance in solution; (*g*) the repeated injection of rabbits with increasing doses of the active principle of the adrenal results in more or less of tolerance, but the serum of such animals has neither more nor less neutralizing (antitoxic) effect upon solutions of the active principle than has the serum of normal rabbits. The condition is probably not, therefore, one of immunity and it is questionable if antitoxins are elaborated as a result of such injections.

The Nephrotoxins.—Dr. R. M. Pearce, of Philadelphia, read a paper discussing the effects of the injection of nephrotoxins upon various animals. These substances were prepared by causing the degeneration of the kidney of an animal while it is still in situ by various irritants and by introducing kidney tissue under proper precautions as regards sterility, especially into animals of the same and different species. None of these supposed nephrotoxins cause any increase of blood pressure or any signs of ordinary kidney trouble. Certain dogs were found, however, to be suffering from spontaneous nephritis. The serum of these dogs introduced into the veins of other dogs whose kidneys were healthy produced all the symptoms of nephritis. The serum of these second dogs had a like effect, but to a less degree on the third dog. You can see then that certain substances in the blood of animals suffering from nephritis may be productive of nephritis.

Capsule of the Kidney.—Dr. S. J. Meltzer, of New York, presented a report of observations by Dr. Haven Emerson, of New York, on the changes noted in the kidneys after their decapsulation in various animals. In all cases there was a regeneration of the capsule of the kidney. When kidneys surrounded by the capsule were painted with a solution of potassium iodide this substance was not absorbed into the urine. When painted on the decapsulated kidney it was at once absorbed. The kidney capsules are important then in protecting the kidney from substances in their neighborhood. They also have a biological significance, and may not be removed with impunity. In certain cases after decapsulation, new blood vessels were formed from surrounding organs to the surface of the kidney, but adhesions took place to the liver and pancreas, and colored material injected into these kidneys was afterward found in these organs. This constitutes a new danger of the operation, which may possibly not apply to human beings. It seems important, however, that experiments with regard to the function of the kidney capsule and its importance, together with the danger of its removal, should be studied experimentally on animals, rather than on human beings, as seems to be the tendency at the present moment.

Successful Decapsulation of the Kidney.—Dr. James Tyson, of Philadelphia, reported a successful case of decapsulation of the kidney, Edebohl's operation, for chronic Bright's disease. The patient was a girl of nine years who had suffered from severe scarlet fever, followed by acute nephritis, which in the course of three years had developed to a high grade parenchymatous nephritis. There was large albuminurea with very bothersome ascites and anasarka. The dropsy and ascites made it impossible for the patient to get out of bed. The abdomen was tapped a number of times, but promptly refilled, and all medical treatment was absolutely unavailing. Under the circumstances the hope held out by Edebohl's operation seemed sufficient to justify its performance.

Result of Operation.—The operation upon the right kidney was performed by Dr. Frazier, and there was an immediate effect upon the anasarka, which disappeared completely. The quantity of urine rose on successive days from 21 to 42 and then to 72 and 102 ounces in the twenty-four hours, and finally became an average of 60 ounces. The ascites disappeared completely in connection with this diuresis. The quality of the urine also at once improved. The albumin diminished and the casts were less frequent. When the patient was allowed to get on her feet, however, the albumin and casts increased somewhat. Two months later the decapsulation of the left kidney was done and was followed by complete disappearance of the albumin and casts. The patient was kept in bed for some time and then was allowed to get up and go around, when the albumin and a few casts once more appeared.

Result Upon the General Health.—The patient's general health at once improved. She gained in strength and in appearance, and her digestion improved so as to enable her to eat heartily. Notwithstanding warnings she plays around very freely and considers herself entirely well. The improvement is so marked that Dr. Tyson would not hesitate to recommend the operation under similar circumstances, since in this case it really proved life saving. The rationale of the operation is not easy to understand. It has been claimed that a new blood supply is furnished to the kidney through the adhesions which form. In one case a floating kidney operated upon by Dr. Clark, of the University of Pennsylvania, an artery was found entering the convexity of the kidney and the real renal artery was found to be obliterated because of twists at some time during the movements of the kidney. A new blood supply would not seem impossible then. The therapeutics of chronic nephritis were practically at a standstill. This operation gives a new hope, and though it cannot as yet be decided in what cases it may be suitable a distinct gain has been made.

Further Cases.—Dr. A. McPhedran, of Toronto, reported a case in which decapsulation of the kidney was performed for chronic Bright's disease that was threatening life. The result was very satisfactory. Shortly after the operation the patient acquired pneumonia, yet went through this successfully. The urine became much freer and the albumin was reduced to scarcely more than a trace, and the general improvement was very marked. Before the operation the person had been very much emaciated. The appetite has been restored, the digestion is good, the patient has gained in weight, and though the albumin has returned somewhat the operation is considered by the patient as being very successful. In this case Reginald Harrison's explanation, that slitting of the capsule decreased the tensity of the kidney substance and so permitted free circulation was not the reason for the improvement, since the kidneys were not confined within a tense capsule.

Three Similar Cases.—Dr. Cutler, of Boston, reported three decapsulations of the kidney. The first case improved shortly after the operation, but most of the symptoms recurred and death took place in six months. At the autopsy complete regeneration of each of the capsules was found to have taken place. In the second case after operation an abundance of fat was found in the urine. The albumin

casts disappeared, however, and the anasarka and dropsy did not recur. Notwithstanding the fact that there are slight traces of albumin in the urine and that she had been warned of the necessity of exercising great care this patient earned her living as a servant all last winter, and considers herself perfectly well. In the third case the symptoms were quite desperate. It was postscarlatinal nephritis of five years' duration, and the mother decided in taking the chances of operation. Now, a year after the operation, the child is in blooming health and resents the restraint which has been considered necessary in order to give full opportunity for complete establishment of a new circulation, if that is to be Nature's curative method. The child has not gone to school, but has frequently stolen out to play with other children, has increased in weight and health, is growing normally, has a good appetite and feels perfectly well.

In closing the discussion, Dr. Tyson said that the operation seems to promise more for children than for adults, but the limits of its possibilities for good are not as yet known. Experimentally it has often been noted that after removal of the capsule in animals it is regenerated.

Paroxysmal Hematinuria.—Dr. William Gilman Thompson, of New York, reported two cases of this extremely rare disease, which have been under observation now for respectively sixteen and fourteen years. The first, a young man of twenty years, under observation for sixteen years, suffers from hemoglobinuria on slight exposure to cold or after fatigue or at times after severe mental emotion. The attack is ushered in by chill, fever, a burning itching of the face accompanied by giant urticaria and by paresthesia over the surface of the body. Stiffness in the use of muscles occurs. Shortly after this the urine becomes progressively darker, urination becomes imperative and frequent, and in the dark urine hemoglobin is found, with a very few red blood corpuscles, on one occasion. Occasionally the condition is complicated by hydrops articulorum, that is, extensive effusion into the joints, and occasionally discoloration. This is not tender or painful, however, to such a degree as to interfere with his moving about and is evidently only the ordinary synovial fluid increased by serum in which hemoglobin is dissolved.

(To be Continued.)

AMERICAN GYNECOLOGICAL ASSOCIATION.

SECOND DAY—MAY 13TH.

(Continued from Page 1007.)

The Etiology, Pathology and Treatment of Puerperal Sepsis.—Dr. Hiram N. Vineberg, of New York City, contributed a paper with this title. He said that severe sepsis might be caused by a variety of pathogenic germs. The variety of germ found in the uterine discharge in a given case was no criterion of the severity of the case and formed no safe guide as to prognosis or as to the treatment to be adopted. Bacteriological examination of the blood was of little value, either from a prognostic or therapeutic standpoint. The treatment of puerperal sepsis must be based chiefly upon the clinical history and physical signs of each individual case. Wounds or infection in the perineum, vagina or cervix are to be treated on general surgical principles of irrigation and drainage. Curettage was indicated where there are evidences of placental decidual residue in the uterus independent of the variety of bacteria that may be found in the uterine cavity. In those rare cases in which adherent and sloughing placental tissue can not be removed, either with the sharp curette or fingers, hysterectomy was indicated, provided the patient was not already moribund. Hysterectomy was also indicated in cases of septic endometritis, or infection of the placental site, so long as the infection was still limited to the uterus, and when the symptoms steadily grew worse in spite of uterine irrigation, with or without curettage, and appropriate hygienic stimulating treatment. In abscess of the uterus the abdomen should be opened, and, when feasible, the purulent foci were to be drained and the uterus preserved. If the uterus be studded with small abscesses, hysterectomy was indicated. The abdominal was to be preferred to the vaginal route for hysterectomy. If the infection passed from the uterus into one or other tube and set up a violent grade of inflammation, the abdomen should be opened and the infected tube removed before a general peritonitis developed. When the infection passed through the uterus and set up a general peritonitis, a case might occasionally be saved by a timely abdominal section and drainage. In cases of parametric exudates, the treatment should be of a conservative nature, and surgical intervention was indicated only when there were evidences of pus formation. In obscure cases in which the pathological lesion cannot be determined, and the symptoms were steadily growing worse, it might be advisable to open the abdomen to search for a hidden purulent focus, or for a circumscribed slough of the uterus. The procedure proposed by Trendelenburg, and executed by him and others, of ligating the pelvic veins when they became infected and thrombosed, was worthy of further trial.

Dr. William R. Pryor, of New York, in the discussion, took issue with the essayist in regard to the significance of certain pathogenic germs. In the mild cases of puerperal sepsis, very rarely was the streptococcus present, while in the severe ones streptococci were found. In the mild forms of the disease many other kinds of germs were found, chiefly staphylococci and saprophytic bacteria. The form of puerperal sepsis which demanded careful attention was due to the streptococcus.

Dr. Edwin B. Craigin, of New York, related his experience at the Sloane Maternity. He was free to confess that in this institution infection occasionally occurred, because cases were taken undelivered, no matter whether they had been handled by midwives or by tyros. Patients were admitted whether they were just in labor, or whether they had been in labor for several days. Occasionally patients had been lost from puerperal infection, although pathologist and bacteriologist were unable to find the streptococcus. A number of severe cases had been observed in this maternity in which a variety of bacteria were found in the uterus. In the management of puerperal sepsis, he emphasized two points: (1) To make sure the uterus was emptied, and (2) in making certain that it was emptied, do just as little damage to the inside of the organ as possible.

Dr. J. Whitridge Williams, of Baltimore, Md., laid stress on the value of bacteriological examinations of the uterine lochia and of the blood. In many cases there was no definite indication for treatment from such examinations; yet there was no doubt in his mind that important and valuable information as to the condition of the patient could be elicited in this way, more particularly by an examination of the blood. He had seen but two cases of puerperal sep-

sis in which he felt operation was distinctly called for.

Dr. Matthew D. Mann, of Buffalo, spoke of gonorrheal infection in connection with the puerperium. Recently he saw an interesting case in consultation. The patient, when he first saw her, had been sick for more than a week. Her temperature ran as high as 111° F. before death. She had been having a temperature of from 107 to 108° F. for a number of days before he saw her. Her pulse was not exceedingly rapid, it being only 120. Examination of the discharges by several competent bacteriologists showed pure cultures of the gonococcus. There was no other germ present in any of the secretions. He thought the infection would possibly localize itself and the woman would recover; but the joints and heart became affected, and the patient died after having had a high range of temperature for three weeks.

Dr. Gill Wylie, of New York, said there could be no question but that surgical intervention was indicated in some of the severe cases of puerperal sepsis. Of his first nine cases, treated at the Bellevue Hospital many years ago, seven were treated locally, and two surgically. He believed the uterus should be emptied in every case of severe streptococcus infection connected with the puerperium.

Dr. Edward P. Davis, in speaking of hysterectomy in cases of puerperal sepsis, stated that this operation had nothing definite to support it except in rare cases of adherent placenta. A method which yielded good results, where irrigation had failed, consisted in opening the abdomen and inspecting the uterus, tubes and ovaries, freeing adhesions, etc., and, if there was a collection of pus found in the tubes, draining by means of iodoform gauze carried through into the vagina, separating the organs from abnormal adhesions.

Dr. Malcom McLean referred to the curette as a dangerous instrument in cases of puerperal sepsis in the hands of the average general practitioner. Emptying of the uterus was an absolute necessity in some cases, especially where there was evidence of putrid absorption, with chill, and sudden high temperature.

Dr. Henry D. Fry said that the practice at the Columbian Hospital, where a large number of maternity cases were observed, if the patients were seen in the beginning of sepsis and the infection seemed to be confined to the uterine cavity, the first thing done was to thoroughly clean out the uterus. After having taken a culture, active treatment of the uterus was suspended until the result of the culture was made known. If there were retained pieces of placenta, blood clots, attended with a foul odor, producing infection, the indication for cleaning out the uterus was clear. On the contrary, if the culture showed streptococcus, staphylococcus, colon bacillus, or gonococcus, or any of these infective agents, the uterus was left alone. In cases of streptococcus infection he believed the use of the curette would do a great deal of harm, in that it would break down the protective zone of inflammatory tissue which was thrown out by nature and would cause ultimately a general systemic infection.

Dr. Herman J. Boldt, of New York, said experience had taught him, so far as the treatment of puerperal sepsis was concerned, that a bacteriological examination of the secretions from the vagina or from the uterus, or a bacteriological examination of the blood, furnished no indication whatever, because there was usually a mixed infection, both streptococci and staphylococci being found in the secretions of the uterus or vagina. Such patients frequently manifested mild clinical symptoms, although operative intervention was not indicated. In all cases that came under his care, examinations of the secretions and of the blood were invariably made, and in patients, who showed bacteria in the blood, even a pure staphylococcus infection, the general condition of the patient did not seem to indicate the necessity of surgical intervention, consequently they were left alone, and recovered. On the other hand, many patients showed absolutely nothing in the blood, yet they died, so that as the result of the accumulated experience, bacteriological examinations of the secretions and of the blood of such patients did not give a definite clue as to the indication for treatment. Hysterectomy was of no avail in the intense cases of puerperal sepsis, particularly the foudroyant forms, as the patients died within a few days.

Dr. Seth C. Gordon thought surgical treatment was undertaken too early in some cases of puerperal sepsis. If there were abscesses of the Fallopian tube, they should not be opened until one was quite sure that he could make a straight incision from the vaginal vault into the abscess cavity without having any doubt as to whether pus was limited to the top of the vaginal wall. Every time an abrasion was made in the uterus or vagina with the curette or knife, a new avenue of infection was opened up and caused in many cases a great deal of harm.

Dr. H. G. Wetherill referred to the Carosso method of treatment of puerperal sepsis, as advocated by Dr. Edward J. Ill, of Newark, N. J., several years ago. Its value was unquestionable.

Repetition of Cesarian Section on the Same Patient: The Experience of the Boston Lying-in Hospital.—Dr. Charles M. Green, of Boston, read a paper with this title. After a brief summary of the experience of the Boston Lying-in Hospital, with repeated Cesarean sections, the writer raised the question whether it was justifiable, in performing Cesarean section for either an absolute or an elective indication, to remove normal organs or to resort to other procedures with a view to preventing subsequent pregnancy and the risk of a repeated section. The writer sought to answer this question in the negative and invited discussion of his views. Reference was made to a paper read by Dr. Coe at a meeting of the Society in New York in May, 1896, entitled "Cesarean Section; Suture of the Uterus *versus* Total Extirpation." Of nine repeated sections, all performed on a relative indication, four were done, one each, by four members of the staff, and five by the author. Two were done after labor had been in progress for nine hours each, and seven at an elected date before labor began. One patient had her first section without the hospital; six had their first and second, and one her first, second, and third sections, within the hospital. In one case there were no adhesions; in seven cases there were more or less adhesions; the duration of operation was from 39½ minutes to one hour and twenty-four minutes. In the case that died of shock the duration was forty-eight minutes. In one case the utero-abdominal adhesions were so extensive that the fetus was delivered without opening the peritoneal cavity, and the time of operation was thirty-eight minutes. The nine infants were discharged well; and of the nine mothers, one died, a maternal mortality of 11 per cent.

These results were not reported as unique or remarkable; repeated sections had resulted favorably in other clinics. But they were reported in the hope of influencing opinion that the time had come when the Society should withhold its approval of the doc-

trine that women should be sterilized at their first Cesarean section, in order that they may not be subjected to the risks of a repeated section.

President's Address.—This was delivered by Dr. Joseph E. Janvrin, of New York City. After paying fitting tributes to Drs. John Byrne, T. Gaillard Thomas, and Edward W. Jenks, Dr. Janvrin discussed the subject proper of his address.

Surgical Treatment of Early Diagnosed Cancer of the Uterus, More Especially by Hysterectomy.—Dr. Janvrin pointed out the conditions in which vaginal or abdominal hysterectomy held out good hopes for a radical cure; also the conditions in which the operation held out some prospect of a radical cure, and certainly a prolongation of life with a more comfortable existence than could possibly be hoped for if hysterectomy were not resorted to.

He took up the development of cancer in and from the cervix. His own observations as to the extension of epithelioma beginning in the cervix were somewhat as follows: (1) Up and into the cervical canal; (2) up and into the uterine body; (3) to the tissues surrounding the cervix, the parametrium, especially; (4) downward upon the vaginal mucosa, and after a certain time through the mucosa into the wall itself.

The author, after quoting freely the statistics of other writers, both European and American, regarding cancer of the uterus, stated that his own statistics up to January 1, 1899, were as follows: Abdominal and vagino-abdominal hysterectomies: twelve cases, two cured, more than eight years having elapsed since operation. Six recurrences. Four deaths from operation (two from shock, one from septicemia, and one from uremia). Percentage of cures, 16.6. Vaginal hysterectomies: Thirty-eight cases, ten permanently cured; fifteen recurrences; four deaths from operation; ten lost sight of after a few months; percentage of cures, 26.3. Total number of cases, 50; twelve cured; general percentage of cures, 24.

He believed that vaginal hysterectomy, with removal of as much parametrium as is possible by this method, and also the removal of the upper half inch or more of the vagina, would accomplish just as much as any other method and, at the same time, carried with it the least danger as an operation *per se*, for it was extremely rare that a patient succumbed to this operation. It was by following out this rule that the statistics of his own case up to January, 1899, had been so favorable. During the past four years he had extended the field of operation for the purpose of removing a highly offensive local condition, and in that way making a longer lease of life more comfortable to the patient and less offensive to herself and her friends. The use of the electric cautery clamp, as improved by Dr. A. J. Downes, should give the best results in this class of cases. The author's object in his address was to give (1) the conditions under which hysterectomy should always be done for cancer of the uterus, leaving it as a matter of choice to each individual operator as to whether he selects the vaginal or the abdominal or the combined vagino-abdominal route; and, at the same time, to fortify this position with sufficient statistics, at home and abroad, to make the position tenable, and to impress upon the profession at large the absolute necessity of recognizing the early symptoms, and then seeking the advice and assistance of some surgeon who has had a good amount of experience in these cases, so that hysterectomy could be done when it ought to be done. (2) To describe another class of cases in which any operation, no matter how radical, will in a large majority of cases fail to give permanent relief; but, at the same time, to state his entire approbation of it in the hands of experts.

Carcinoma of the Cervix Uteri.—Dr. Thaddeus A. Reamy, of Cincinnati, Ohio, presented a paper on this subject. Among other things, he stated that spontaneous recovery from carcinoma did not occur. Unequivocal recovery lasting from ten to twenty-five years of two cases following removal of the diseased and adjacent tissues, proved the curability of carcinoma of the cervix and also its local origin. The author reported six cases of carcinoma of the cervix uteri. No. 1 was operated upon eighteen years ago, and is in good health to-day. No. 2 had gone nine years without recurrence of the disease. No. 3 fifteen years without recurrence. Twelve years had elapsed without recurrence in Case No. 4. In No. 5 eighteen years had elapsed since removal without recurrence, and No. 6 twelve years without recurrence.

Primary Carcinoma of the Vulva.—The author of this paper, Dr. Reuben Peterson, of Ann Arbor, Michigan, reported four cases of primary carcinoma of the vulva. He presented a résumé of the literature of the subject and the conclusions drawn therefrom. The cases were narrated in detail. He spoke of the frequency of the condition as compared with other carcinomatous states of the genital tract, and discussed at length the diagnosis and symptomatology. In considering the operative treatment he spoke of the advisability of removing the inguinal glands. If carcinoma of the vulva was seen and treated early enough, good results could be obtained. Veit quoted Schwartz as having ten permanent recoveries out of twenty-three cases. While this might be overstating the facts, it was unquestionably true that there was much more hope of cure in cases of carcinoma of the vulva after the radical operation than after the most radical operations for carcinoma of the uterus.

Renal Decapsulation for Puerperal Eclampsia.—Dr. George M. Edebohls, of New York, read a paper on this subject. Renal decapsulation for puerperal eclampsia of renal origin was the logical outcome of the encouraging results following the author's operation in cases of chronic Bright's disease. The author said he had successfully performed bilateral renal decapsulation for puerperal eclampsia upon a primipara two days after a forced delivery. The convulsions began before labor and continued to the time of operation, the patient having a convulsion while under chloroform on the operating table. This operation, performed on February 17, 1903, was believed to represent the first instance of renal decapsulation, or, for that matter, of any operation upon the kidney or kidneys, ever undertaken for the cure of puerperal convulsions. The favorable results, both immediate and remote, in this case, full details of which were given in the paper, at once assign a place to renal decapsulation as one of the resources at the command of the profession in the treatment of puerperal eclampsia. He said a woman, who was suffering from uremic convulsions, was entitled to the positive benefits of decapsulation, whether pregnant, in labor, or in the puerperium.

THIRD DAY—MAY 14TH.

Should the Uterus Be Removed When the Ovaries and Tubes Are Removed in Cases of Double Pyosalpinx, When Operating Either Through the Abdomen or the Vagina?—Dr. Andrew F. Currier, of New York, in a contribution on this subject stated that if this was proposed as a matter of routine, the writer would reply emphatically, no. If it was proposed as an expedient, when the uterus itself was diseased, extensively diseased, he would say, yes. It might

also be removed if it had been greatly injured in the extrication of the appendages, or if it should seem to be required as a means of controlling troublesome hemorrhage. To remove the uterus in a young woman might possibly produce unfavorable mental effect as a consequence, near or remote. To remove the uterus from one near, at, or past the menopause, might add an element of risk to the operation. To remove the uterus might weaken the pelvic roof, and might introduce an element of danger from enterocele. To remove the uterus unnecessarily was bad morally, for it tended to establish the impression of the unimportance of the organ, and that it might be unhesitatingly extirpated by any one who had the requisite skill. To remove the uterus on the ground that it might possibly be the seat of malignant disease in the future was assuming more than the clinical history taught in the great majority of cases, and was, moreover, a reproach to surgery, making it destructive instead of conservative.

Dr. Philander A. Harris, of Paterson, N. J., said that when suppuration had become well established in both tubes their exsection was the only operation which could be relied upon to effect a cure. By exsection was meant the removal of the lumen of the tube to the uterine mucosa. Less radical operations, as hemisection and disinfection of the ampullæ and larger portions of the tube, probing and washing of the tube and amputation of distal portions of pus tubes were incomplete operations, and were proportionately unsuccessful in that they left behind a diseased sinus, which not only continued to exist, but was productive of discomforts and other ill consequences to a greater or less extent. In bilateral exsection of double pyosalpinx sufficient ovarian stroma might be left to influence and continue menstruation in at least 95 per cent. of any large class of cases operated upon. The ovaries frequently participated in suppuration which they derived from pus tubes. But in them suppuration was more easily terminated and exsection was not advised excepting for extensive abscess of the ovary at the time the tubes were exsected, or a belief of knowledge that the suppuration in the ovary was tubercular in character. Simple excision of double pyosalpinx afforded the maximum degree of relief, with a minimum of mutilation, and interference with the functions of the pelvic organs. The complaints arising from the existence of endometritis often ceased after simple exsection of double pyosalpinx. If the symptoms of endometritis continued, and greatly harassed the patient, the uterus might be removed by vaginal section. The price of removal of the uterus in every case of double pyosalpinx might be partly estimated by the following results: (1) Loss of menstruation in every instance; (2) partial or complete extinction of the sexual quality in a large proportion of the cases, together with incomplete physical capacity for sexual participation; (3) injury to the nervous system of the patient, arising from her knowledge and appreciation that she had been prematurely and possibly unnecessarily deprived of these and other qualities which rendered her physically and, to a certain extent, morally inferior to other women.

Dr. I. S. Stone, of Washington, D. C., stated that no organ should be removed unless it was absolutely necessary. In a large majority of cases the pus found in diseased adnexa was sterile. It followed that the chief element of danger from sepsis was eliminated, and the uterus was not the seat of dangerous microbic infection. The exception to the above rule might be found in puerperal infections. When purulent adnexa were removed the uterine cornua should be excised and the uterus permanently sealed, and thus made a barrier against further infection and also to permit effective treatment addressed to the uterine cavity if necessary. Hysterectomy required additional time, caused further traumatism, and necessitated changes in the anatomical relations of the vagina, bladder, etc. If necessary to drain the pelvis by way of the vagina, the usual route through the cul-de-sac posterior to the uterus answered every purpose. Finally, a number of women objected to panhysterectomy, and besides the question of its effect upon the mental status of the patient was *sub judice*.

Dr. Matthew D. Mann, of Buffalo, said (1) that the almost sole cause of pus tubes was gonorrhea, though there might be a mixed infection. (2) The uterus was usually infected and might make trouble afterwards and be the cause of spreading the infection. (3) The uterus was no longer of any use. (4) Menstruation did not always stop after the removal of the tubes and ovaries; and if it remained, it might become excessive and cause trouble. (5) It might become the seat of cancerous disease. (6) In acute infection the removal of the uterus afforded the best means of securing drainage. (7) The results by the vaginal route, where the uterus was always removed, warranted its removal by the abdominal route. (8) The woman's sexual life was unaffected by the removal of the uterus. (9) The additional time taken for its removal was more than counterbalanced by the securing of good drainage.

Dr. Charles P. Noble, of Philadelphia, Pa., said that of hysterectomy for circumscribed pus limited to the uterine appendages, that is, pyosalpinx or abscess of the ovary, he had had 58 cases, one death, a mortality of 1.7 per cent. Of hysterectomy for intraperitoneal abscess in addition to pus in the uterine appendages, he had had 6 cases, 4 deaths, a mortality of 66⅔ per cent. Of appendages removed for circumscribed pus contained in the tube or ovary, that is, pyosalpinx or abscess of the ovary, 76 cases, 7 deaths, a mortality of 9.2 per cent. Of appendages removed for circumscribed pus contained in a tube or ovary since January 1, 1895, 36 cases, 2 deaths, mortality 5.5 per cent. Of appendages removed for intraperitoneal abscess in addition to pus in ovary and tube, 22 cases, 5 deaths, mortality 22.7 per cent. Incision and drainage for pelvic suppuration, 58 cases, 1 death, mortality 1.7 per cent.

Ureterocystotomy.—Dr. J. Wesley Bovée, of Washington, D. C., narrated the history of this operation, pointed out the indications, discussed the diagnosis routes and methods of operation, complications, technic, after treatment, detailed histories of cases, and gave the results.

Note on the Occurrence of Gall-stones in Insane Women.—Dr. Walter P. Manton, of Detroit, Mich., read a paper on this subject. He stated that cholelithiasis was of frequent occurrence among insane women, but that symptoms were usually wanting, so that statistics must be obtained solely from autopsy findings. From his experience at the Eastern Michigan Asylum he found that gall-stones were present in rather more than 26 per cent. of the patients dying at that institution in whom the abdominal contents was examined. The paper was intended only as a small contribution to the knowledge of the subject, and as preliminary to more extensive discussion of gall-stones in insane women at some future time.

Excision of the Proximal Ends of the Fallopian Tubes at Their Origin in the Uterus, the Operation of Choice, for the Extremely Rare Cases Wherein Sterility Is Desirable.—Dr. Philander A. Harris, of Paterson, N. J., contributed a paper with this title.

The object of this operation was to take the place of the Porro operation; to take the place of bilateral removal of the ovaries; to take the place of bilateral excision of healthy tubes. Menstruation would not be sacrificed. Every advantage arising from retention of the ovaries would be preserved to the individual, excepting the single item of impregnation. Tubes thus disconnected from the uterus would probably remain immune from future gonorrheal infection of the endometrium. A patient thus sterilized could doubtless be cured of her sterility by implantation of the tubes through the uterine cornua to the uterine cavity. While there were doubtless cases which were characterized by certain conditions of the body, mind or nervous system calling for the voluntary production of sterility, there must necessarily be a very limited field for the employment of this operation. If a case was to be surgically sterilized, it should be effected in such manner that the patient and her friends might feel that she can be restored to tertility, should the pathological factors of her case so abate or disappear as to render impregnation and pregnancy permissible.

Personal Experience in Operations Upon Diabetic Patients.—Dr. Charles P. Noble, of Philadelphia, in discussing this topic, said that of the seven patients operated upon by himself, six made good recoveries, and one died of diabetic coma. In the six remaining cases the healing of the wounds and the general progress of the patients toward recovery was not different from that in patients not the subject of glycosuria. In looking up the literature of the subject he had been able to add to his own list sixty-two cases of operations upon diabetics, upon those organs of the body which were the special field of the gynecologist and abdominal surgeon, making a total of sixty-nine cases. The contraindication to operation was strongest in those patients suffering markedly from the constitutional symptoms of diabetes—poor nutrition, wasting, intense thirst, and morbid appetite.

Officers for the Ensuing Year.—The following officers were elected: President, Dr. Edward Reynolds, of Boston, Mass.; First Vice-President, Dr. Whitridge Williams, of Baltimore, Md.; Second Vice-President, Dr. Edward P. Davis, of Philadelphia, Pa.; Secretary, Dr. J. Riddle Goffe, of New York City, re-elected; Treasurer, Dr. J. Montgomery Baldy, of Philadelphia, Pa., re-elected. Place of meeting, Boston, Mass., fourth Tuesday in May, 1904.

BOOK REVIEWS.

BOOK ON THE PHYSICIAN HIMSELF, AND THINGS THAT CONCERN HIS REPUTATION AND SUCCESS. By D. W. CATHELL, M.D. The Twentieth Century Edition, being the eleventh edition revised and enlarged by the author and his son, WM. T. CATHELL, Baltimore, Md. F. A. Davis Co., Philadelphia.

THIS book is dedicated to the younger members of the medical profession and also the older ones, who have paused at less than the average degree of success in life. We might wish that the curricula of our colleges in medicine would include among the studies of the third or fourth year this manual on the physician himself.

There are so few of us who, when we enter into the practice of medicine, know more than the mere outlines of gentlemanly conduct to guide us in a relation which will mean so much to our future success. True it is that there are a few fortunate ones who have the privilege of assisting some older physician, and by means of his experience and counsel achieve a stature of policy and address as well as a prestige in the eyes of their client which is invaluable. For the major part, however, some such work as this should be thoroughly known.

This work has been before the profession so long that it is unnecessary to outline its chief features. Thus, it might be said that it is full of good advice about the little things that, if neglected, lead to discomfort if not disaster.

We are inclined to believe that the author's dedication in which he regards the personal side of the physician's life as the lesser one, in reality the greater, because there is so much hard, hard work in the actual practice of medicine that the study of the scientific side is really almost play.

THE DEVELOPMENT OF THE HUMAN BODY. By J. D. MCMURRICH, A.M., Ph.D., Professor of Anatomy in the University of Michigan. P. Blakiston's Son & Co., Philadelphia.

WHILE there is no doubt that a careful study of the origin and development of the organs of the human body makes a most satisfactory and thorough ground work for the study of histology and anatomy, their extensive adoption in the courses of study of the medical colleges of this country has never taken place. This we believe is due largely to the fact that satisfactory manuals have not been to hand. The manuals which have been presented have either been too fragmentary or too detailed, but in the present instance we believe that a happy medium has been struck. This book is some 500 pages in length and, although fairly extensive, by means of a good-sized type and a large number of illustrations, the information conveyed is not too excessive in amount and above all is well digested. We can most heartily commend the volume to the students of medicine and to graduates who desire to refresh their memories on questions of development.

BIOGRAPHIC CLINICS. The origin of the ill health of De Quincey, Carlyle, Darwin, Huxley and Browning. By GEO. M. GOULD, M.D. P. Blakiston's Son & Co., Philadelphia.

THIS is a very interesting book, which may be read to while away a tedious half hour and to come away with the idea that in this day and generation special pleading in medicine is not dead. As is well known, the author makes a brief that the disorders of these celebrated men was due to eye-strain. In our opinion a most fantastic and foolish hypothesis, but knowing that it is not impossible for anyone to see the things that they wish to see, we can forgive the gifted author for leaning so strongly on his specialty.

PROGRESSIVE MEDICINE. Vol. I. March, 1903. Lea Brothers & Co., New York and Philadelphia.

THE present number of Progressive Medicine contains summaries in six branches of the medical sciences. Surgery of the head, neck and chest is treated by Dr. C. H. Frazier; infectious diseases by J. B. Herrick; diseases of children by F. M. Crandall; pathology by L. Hektoen; laryngology and rhinology by A. L. Turner, and otology by R. L. Randolph.

The general scope of the reviews is much similar to that followed in previous issues of Progressive Medicine and the same attention to careful compression is manifest throughout. In the chapter on pathology the newer work of the studies in immunity are very carefully considered, making this by far the best presentation of this difficult subject now obtainable. The volume throughout is the best of its kind, and shows once more that an abstract journal can be made of high value, if carefully and conscientiously edited.